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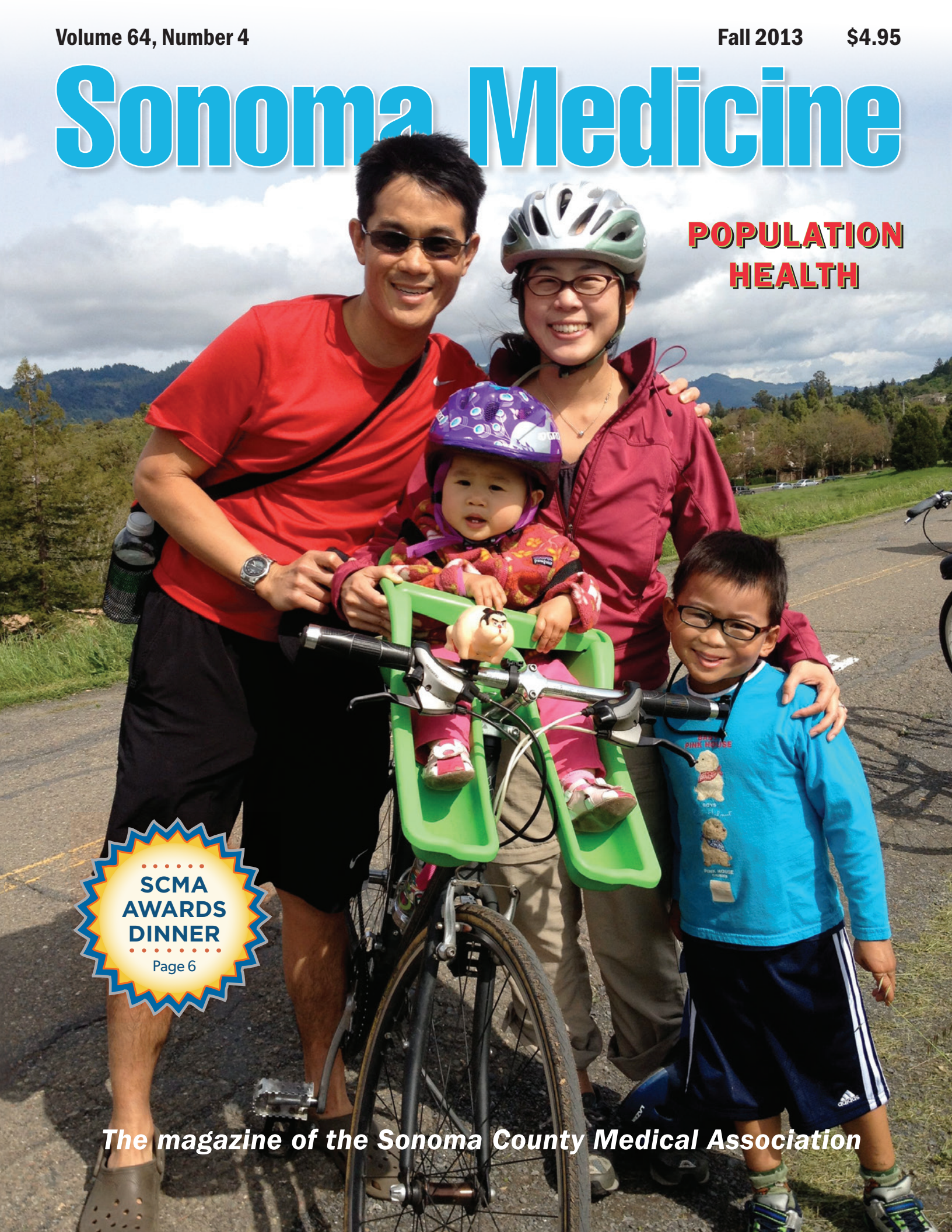

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Sonoma Medicine

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Xóchitl Castañeda is the Director of Health Initiative of the Americas, School of Public Health, UC Berkeley. Her vision and commitment has lead the creation of Binational Health Week, one of the largest mobilization efforts in the Americas to improve the well-being of Latin American immigrants. She received her post-doctoral training at Harvard University.

Lucien Wulsin, JD, Executive Director of Insure The Uninsured Project, a non-profit organization that conducts research on the uninsured and produces reports and data on health care, insurance coverage, and health reform. Mr. Wulsin is working on approaches toimplement coverage for uninsured Californians throughout California.

Gilbert M Ojeda, Director of California Program on Access to Care, School of Public Health, UC Berkeley, provides assistance to California's public decision makers on health care coverage for immigrants and the medically indigent. CPAC is currently engaged in monitoring the implementation of health care reform and assessing the disproportionate impact of proposed Immigration reform in California.

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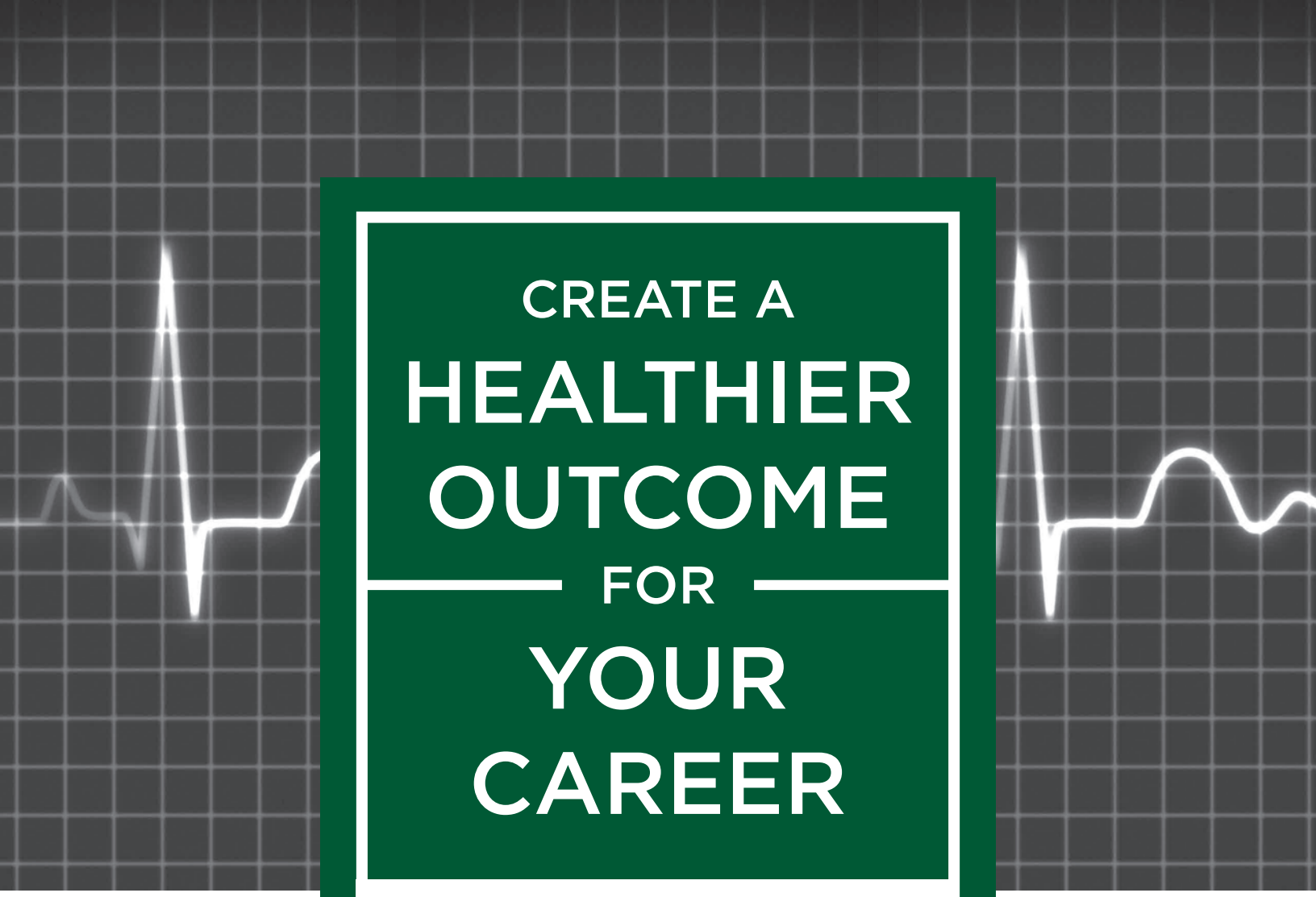

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EDITORIAL

Beyond the Exam Room

Jessica Les, MD

Imagine you are sitting across from one of your patients, Ms. H. Through the window behind her, the autumn sun glows bright as it bows close to the horizon. Your mind is on your patient's many recent medical concerns. A transient ischemic attack during Thanksgiving last year, increasingly difficult to control diabetes, a 42-pack-year smoking history, and most recently an ischemic stroke, leaving her wheelchair-bound with hemiparesis. Whether you are a family physician, cardiologist or neurologist sitting across from this patient, you feel you have inadequate time to care for her and are wondering how, as you watch the sun sink closer to the horizon, you are going to meet her needs today, let alone work with her to prevent future medical catastrophes.

Now rewind one year and imagine that your office has just implemented an electronic health record system. Most staff want to bang their heads against the wall because it takes time to learn the system, and it is slowing down productivity. You just finished seeing a patient with uncontrolled diabetes. As you turn to your computer you think, I wonder how many of my patients have uncontrolled diabetes? You talk with IT and see how to collect this information. Soon, you are able to generate a list of patients with uncontrolled diabetes. You investigate further and discover that most patients in this group are characterized by three things: they have not been seen in two or more years, they have one or no other conditions on their problem list, and their body mass index is greater than 30. Perhaps there are other common variables that aren't captured in their medical chart. Socioeconomic status? Employment? Access to fresh produce in their neighborhood?

Dr. Les, a family physician, serves on the SCMA Editorial Board.

You team up with clinic staff to contact these patients and set up appointments in the coming weeks. Among them is Ms. H. You haven't seen her in years. She has been busy caring for her grandchildren and a sick brother out of state. You learn that she just had a TIA while traveling this Thanksgiving. She didn't follow up with you because she didn't know it was serious. The TIA only lasted a few minutes, and she was busy with her twin granddaughters born last winter. You thought she had quit smoking four years ago but learn that she started again when her brother fell ill.

Over the next year, you work intensively with Ms. H. She decides to quit smoking for good for her twin granddaughters. After a lot of experimentation, she finds a way to fit exercise into her routine by biking to and from work, letting her get her blood sugars under control with oral medication alone.

Now we are back in the present. Ms. H is sitting in front of you. She is not in a wheelchair, because she never had an ischemic stroke. The autumn sun is setting behind her and for a moment, both of you aglow, you don't feel the weight of your charting, phone calls to return and next patient waiting.

This is one tangible glimpse of population health.

The most frequently cited article on population health defines the concept as "the health outcomes of a group of individuals, including the distribution of such outcomes within the group."[1] The "population" is as wide or narrow as you choose to define it. It may be as broad as school-aged children in the United States or as narrow as patients with uncontrolled diabetes in a particular physician's practice, as in the vignette above. The power of population health lies in looking beyond the individual, and the health of our nation depends on it.

Chronic conditions ail our patients and are crippling our ailing healthcare "system." The causes and outcomes of chronic conditions are determined by access to and quality of medical care, income, education, urban design and food systems, among other factors. Yet these arenas remain outside our resource-constrained public health authority. Instead we must take on these complex health determinants as communities, clinics and individual healthcare providers. A great start is looking beyond the patient we are with in the exam room and into patterns and causes of health and disease. Perhaps most important, we must look for the patient who is not in our exam room at all. In this issue of *Sonoma Medicine*, we will learn about many angles of population health, both in the office and out in our community. ◇

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1. Kindig D, Stoddart G, "What is population health?" *Am J Public Health*, 93:380-383 (2003).

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Helping to Improve Sonoma County's Population Health

Walt Mills, MD, and Bo Greaves, MD

Improving the health of our community is a central role for physicians. We do this by caring for individual patients and by engaging in efforts to create the healthiest environment possible for all who live here. The "health of our community" is not uniform; significant health disparities, driven mostly by poverty and racial inequality, continue to affect our community's health status.

Many factors determine community health, including economic security, educational attainment, access to healthy foods, physical activity, personal safety, and level of smoking, drinking and drug use. Healthcare, what physicians do, is not the predominant driver of community health. That is not to say that healthcare is unimportant. Especially for those residents who have developed chronic health problems, access to high-quality healthcare becomes increasingly important to their health status.

There is growing evidence that a healthcare system functions best when it is built on a solid foundation of primary care. Evidence has mounted, furthermore, that primary care delivery works best if it is transformed into a patient-centered medical home (PCMH). A core tenet of this transformation is population health: managing the health of the entire population of people who have established as patients with that practice.

Dr. Mills and Dr. Greaves are both Santa Rosa family physicians and members of Sonoma County Health Action.

Dr. Greaves' 2010 article "The PCMH Learning Collaborative" described early efforts at primary care transformation in Sonoma County.[1] On the verge of full implementation of the Affordable Care Act, now is a good time to take another look at those efforts.

According to Dr. Tom Bodenheimer, co-director of the UCSF Center for Excellence in Primary Care, we are moving away from a model of encounter-based care, where patients identify a need and come to the clinician for treatment.[2] In place of that model, we are moving toward one where the clinician's goal is to improve the health of the population of patients he or she is entrusted with—the "panel" of patients. Succeeding at that goal requires the practice to be transformed into a PCMH where care is accessible, convenient and coordinated, especially at key transition points in the care system. The PCMH uses team care to meet the myriad needs of the entire patient population, and technology is harnessed to carry out every one of these functions.

Beginning in March 2010, Sonoma County Health Action sponsored nine family medicine practices from around the county in a nine-month PCMH Learning Collaborative with grant support from The California Endowment. Participating practices included health centers in Alexander Valley, Petaluma, Santa Rosa (2 locations), Sonoma Valley and West County, along with Kaiser Permanente (2 modules) and Sutter Pacific Medical Foundation. Three and a half years later, most of the PCMH pilot sites have reached recognizable transformation milestones and have started to demonstrate improvements in population health, patient care, and quality. Financial aspects and clinician satisfaction seem to have improved as well. Below we comment on a few early qualitative findings and reflect upon the current status of the core participants.

Since completing the Learning Collaborative pilot in December 2010, many of the sites have received some type of PCMH accreditation. Santa Rosa Community Health Centers, which cares for 42,000 patients, received PCMH accreditation from the Joint Commission in 2012, becoming the first community health center in California to earn such a distinction. Also in 2012, Petaluma Health Center received certification from the National Committee for Quality Assurance (NCQA). The remaining community health centers are all applying for NCQA certification. Kaiser Permanente already has many sites accredited by the NCQA and has not sought additional accreditation. Sutter has invested in a series of PCMH pilots in several practices across its system.

The sites have also embraced advanced technology to deliver high quality care for their patient populations. All of them have implemented electronic health records and have qualified for Medicare's "meaningful use" reimbursements, which amount to about $60,000 per clinician over five years. Most of the sites have established secure portals for patients to email their clinician, schedule appointments, view portions of their medical records and test results, and access health information. Most important, the sites have set up disease registries to enable tracking of their patient population.

In addition, all nine sites have emphasized new ways to ensure prompt access to care. These new ways are called by many names (e.g., advanced access, patient-driven access, open access), but most involve alternatives to in-person visits. Kaiser offers "virtual care" visits, Sutter provides secure email, and the community health centers have initiated secure email.

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The sites in the Learning Collaborative have adopted a model where each patient is identified with one clinician (usually a primary care physician) who is responsible for leading a team that cares for a discrete population. Measures in population health—such as blood pressure control, vaccination rates, mammograms, Pap tests, colon cancer screening, heart disease secondary prevention, and control of asthma, depression and diabetes—are tracked by practice, team and individual clinician. Data analysis helps each team focus its efforts on those areas where performance and outcomes can be improved.

Team-based care is key to patient-centered practice transformation and population health. Achieving high levels of population health is truly beyond any single physician, regardless of training or competence. Each site has created teams comprised of clinicians, medical assistants, registered nurses, behaviorists and front-desk personnel, with all members responsible for the quality of care. This approach has already produced impressive results:

- Using care managers, health centers in Santa Rosa and West County recently demonstrated compelling improvements for high-risk, complex, chronically ill patients, showing an 80% decrease in expenditures for emergency room visits and hospital admissions.
- Santa Rosa Community Health Centers completed a pilot study this spring that doubled the rate of colorectal cancer screening. They used a small grant of $20,000 to leverage electronic health records, patient registries and team care, with medical assistants and other staff involved in outreach and patient education.
- Kaiser Permanente's PHASE (preventing heart attacks and strokes everyday) program has dramatically reduced mortality from cardiovascular disease. Its Santa Rosa hospital as of this writing has had 39 days without a walk-in major heart attack (STEMI) presenting to its emergency room. Physicians will appreciate that this is a very different experience than prior to implementation of the PHASE program.
- West County Health Center now has highly developed care teams, including clinicians, nurses, medical assistants and reception staff who work closely together to manage today's schedule, meet the panel's needs, and provide proactive management of the most complex and high-risk patients.

The Santa Rosa Family Medicine Residency had one of its resident continuity clinics in the collaborative, and they subsequently developed a new PCMH longitudinal curriculum integrated into the three years of family physician training. The curriculum has emphasized performance improvement and leadership as skills for graduates to practice in the PCMH of the future. Many of the graduates remain in Sonoma County, and they will be crucial in meeting our need to provide high-performing medical homes.

In 2010, one local physician leader said, "The really nice part of the Collaborative was the shift to involve the patient voice." Ultimately, it's the patient experience that provides evidence on the effectiveness of the new model. Each pilot site included one or two patients on their team throughout the collaborative, and they continue to include patients in their planning. The health centers, in fact, are required to have more than 50% of their board of directors be health-center patients. Kaiser has incorporated formal patient advisory councils who meet regularly with clinicians and management to help shape patient-centered practice transformation. The bottom line is this: if you want to improve your product in order to better meet the needs of your customers, you need to ask your customers frequently what they need and want.

Each of the sites now measures patient satisfaction and broader elements of the patient experience, and each has noted continuous improvements. How much of these are due to population health efforts is hard to say, but the most vulnerable patients with chronic problems are receiving better-focused team care, whereas others are benefit-

ing from better access, improved office flow, or other dimensions of practice improvement.

In a time where the word *crisis* is usually included in forecasts for future primary care physician workforce estimates, we are more than curious about the physician experience in the PCMH. Several national studies have demonstrated significant improvements. A recent article cited 23 high-performing primary care practices reporting "improved professional satisfaction and greater joy in practice."[3] Locally, graduating family medicine residents are joining practices engaged in active practice improvement, most now recognized as patient-centered medical homes. Residency Program Director Dr. Jeff Haney regularly advises residents to strive for "exceptional care," the real product of practice transformation.

A decade has passed since the American Academy of Family Physicians launched its "Future of Family Medicine" strategic planning effort. This widespread transformation effort launched the movement toward patient-centered medical homes. Studies are beginning to show that this transformation delivers better outcomes and improved patient experience at lower cost.[4] Meanwhile, increasing financial rewards are encouraging the PCMH transformation to spread throughout primary care. Our local experience with the PCMH Learning Collaborative sites give us optimism that we are well on our way. ◇

Emails: walter.w.mills@kp.org, bog@srhealthcenters.org

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Richard Zweig, MD

Each year, American physicians squander billions of dollars and endanger thousands of lives by ordering unnecessary diagnostic tests and procedures. This waste threatens not only our patients, but also the well-being of our country. Unsustainable rises in healthcare costs, in part fueled by our excessive use of tests, siphon money from public education, constrain wages, and increase the national debt. We have the power to control what we order, and it is our responsibility as physicians and citizens to do so.

In 2012, the United States spent over $2 trillion on healthcare—17.6% of its gross domestic product. Diagnostic imaging studies are one of the fastest growing components of this spending, accounting for almost 20% of total cost growth. Estimates show that up to one-third of imaging procedures are unnecessary, costing $3 billion to $10 billion annually.

Doctors order a lot of x-rays and other types of imaging, some of which are potentially harmful. CTs of the abdomen and chest, for example, expose our patients to the same amount of radiation as 769 chest x-rays.[1] A recent study showed that radiation from CT scanning will cause 2% of future cancer cases, resulting in almost 15,000 deaths per year.[2]

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Ordering of common lab tests also contributes to the problem. The Good Stewardship Working Group estimates that in 2009, ambulatory care physicians wasted almost $239 million on inappropriate or unnecessary tests, such as CBCs, EKGs, urinalyses and basic metabolic panels on asymptomatic patients, and Pap tests for women younger than 21. The $239 million estimate does not include the costs of further testing engendered by false positive tests.

It is difficult to calculate the costs and risks that flow from a false positive test. We all know the garden path that leads from a false positive test result. But there are costs we cannot measure. What about the regret we feel when the result we did not expect and know to be wrong appears? How can we explain this to our patient? What will be the cost in fear and lost trust? What further tests must we now order to try to undo the damage, and where will they lead?

To reduce the number of useless or harmful diagnostic tests, we must better know the tests we order, the diseases we treat, our patients and ourselves.

The Tests

If you are interested in statistics, you will enjoy an excellent paper describing the application of probability theory to the use of diagnostic tests.[3] There are also many studies evaluating the value of tests and procedures in certain clinical situations. One such study showed the futility of obtaining lumbar spine radiographs of people with acute low back pain.[4] Expert groups make recommendations about which tests to avoid in certain situations. These have shaped the way we practice, but they may be difficult to apply to an individual patient.

The guiding principle should be that diagnostic tests should not be performed if the results will not affect management. If you are going to treat somebody for an infection, what difference will the sed rate result make? Moreover, when the pretest probability of disease is low, a false positive result is more likely than a true positive. An 89-year-old man with arthralgia is not going to have lupus, so what use is the ANA test result?

We must also have a feeling for the sensitivity and specificity of the tests we order. Highly sensitive, non-specific tests should not be used to screen for diseases in people who have not been properly evaluated. The tests should only be used to confirm a clinical diagnosis.

The Diseases

Often complaints and findings do not lead to an obvious diagnosis. Some of the conditions in the differential diagnosis may be familiar, while others are rarer: we might not have seen them or even thought about them for a long time. There is a temptation then to "shotgun" tests, choosing any test in the list that may have some bearing on the patient's problem. Ordering without careful consideration often leads to a rich harvest of misleading results.

Grouping of tests into panels can be valuable, especially when screening for underdiagnosed illnesses in vulnerable populations. The STD panel is an example of this value. But panels that group tests of widely different sensitivities and specificities, meant to diagnose very different diseases (e.g., the arthritis panel), are poor substitutes for careful patient evaluation and knowledge of the diseases we are trying to diagnose.

The Patient

Every test we order is a therapeutic intervention, for good or ill. Patients await the results with a mixture of hope and fear. A false positive result can increase anxiety and depression. Sometimes these negative effects can be long-lasting. We need to consider whether a false positive test result will drive an already anxious patient further around the bend.

Patients often request tests, sometimes because they are afraid or want to avoid regret for missing a condition that could have been treated. Exploring the reason for the request, explaining the risks and benefits of the tests, and reviewing any actions that might follow from a particular result may help assuage the fear and prevent a lot of grief later on.

Ourselves

Our own experiences, personalities and habits influence how we order tests. An offhand remark from an attending during residency may have worked its way from our cortex to our spinal cord, so that a certain clinical stimulus triggers an automatic ordering behavior. If we feel we should have diagnosed that pancreatic cancer sooner, the next five people with abdominal pain may get CT scans. Lawsuits are notorious for provoking the disaster of defensive medicine.

Our jobs are hard. But we have to recognize these influences for what they are and make sure we rise above them to make objective and informed judgments about the tests we order. We owe it to our patients and our country to reduce the waste and harm caused by needless ordering of tests and procedures. We must strive for a better understanding of the proper application of laboratory tests, the diseases we treat, the influence these tests have on our patients, and our own ordering habits. ◇

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Sonoma County: Future Bicycle Capital of the Nation?

Anthony Lim, MD, JD

Dr. Lim and his wife Dr. Jean Lim, with their children Joshua and Julia (asleep in child seat).

I am frustrated that since moving from Boston to Sonoma County, I have had to give up bicycle commuting for car commuting. I used to thrive on starting and ending each day hopping on my bicycle, communing with the outdoors, and exercising my body on my commutes between home and various destinations in the greater Boston area. I was undeterred by freezing winters, black ice or aggressive drivers: I simply added more layers of clothing, watched the roads more carefully and learned to anticipate the traffic around me. I was proud that on certain days my bicycle was the only one parked in the bike racks of my destination.

Since moving to Sonoma County, however, I do not feel safe bicycling to and from work, despite living less than two miles away. Although three-quarters of the route has clearly marked bike lanes with adequate width, the other quarter has lanes that are either too narrow or altogether absent on streets where cars are whizzing by at 30–40 miles per hour. Strong as my desire is to ride my bike, I cannot justify taking such a risk.

I am not alone in my hesitancy to commute by bicycle. In a recent guest opinion in the *Press Democrat*, local winemaker Matthew Wilson describes his own sad conversion from two-wheel to four-wheel commuting.[1] In 2008, as gas prices hit $4 a gallon, he decided to start bicycling more often. Initially, he experienced the wonderful benefits that come with bicycling: increased energy, weight loss, improved mood and monetary savings. He went so far as to get racks and panniers for his bike, and he even made Costco trips using only his bicycle. Five years later—after many near-accidents despite wearing bright colors, using hand signals and anticipating the actions of unsafe drivers—he laments that "my cycling career is over." After switching to an SUV, he observes, "I can't tell you how comfortable and safe I feel now with 3,000 pounds of metal protecting me."

A few weeks after reading Mr. Wilson's essay, I was dismayed by yet another article in the *Press Democrat* describing a hit-and-run road-rage incident in west Santa Rosa.[2] A cyclist and a driver got into a disagreement, and the driver apparently threw the car into reverse to confront the cyclist, then ran him over and left him with mul-

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tiple broken bones and internal injuries. Given such grave risks for bicyclists sharing the roads with motorists, it is not surprising that only 1% of Sonoma County residents use their bicycle for trips that are less than 3 miles.[3]

The low bicycle ridership rate in Sonoma County is unacceptable from a public health standpoint, especially in light of the obesity epidemic. The percentage of obese Sonoma County adults (18 or older) doubled from 14% in 2001 to 28% in 2007.[4] Physical activity, in addition to good diet and nutrition, is an essential tool for combating obesity and improving the health, fitness and well-being of Sonoma County residents. Bicycling, in turn, is a fun, low-impact and practical means of increasing physical activity for young and old alike. Boosting the percentage of people who bike instead of drive would also reduce total greenhouse emissions and protect the environment: bicycling and walking are the only transportation modes that have essentially zero carbon emissions.

Some people may be tempted to agree with Matthew Wilson's statement that "No one will ever be able to convince me that cars and bicycles can coexist." Perhaps a visit to Davis, just an hour and a half away, might change some minds. For the health of our county's population and the protection of our environment, I advocate we follow our neighbor's inspiring example.

Davis is often called the bicycle capital of the United States because of its high rate of bicycle usage and its long history of providing a cyclist-friendly infrastructure and environment. The city is beautiful proof that cars and bicycles can indeed coexist.

Davis admittedly benefits from certain natural advantages, such as its mild climate and flat topography, factors over which even the most ardent bicycle advocates in other cities like freezing Boston or hilly San Francisco have no control. But Sonoma County is similarly blessed with a mild climate, as well as relatively flat terrain in all nine of its incorporated cities.

What then is the missing factor? One word: *attitude.* As noted in a conference presentation, "The most significant element has been the attitude of Davis residents and city officials and the provisions they have made to ensure cycles are not crowded off city streets by growing automobile traffic."[5] This shift in attitude and perspective began during the April 1966 Davis City Council election, when the primary issue was the provision of bikeways for commuters on public streets. Pro-bikeway candidates were elected, and they immediately installed a trial system of bikeways—which proved to be immensely popular. Rapid expansion of the system followed, and the rest is history.

Ever since that momentous election, Davis's policies and investments have reflected its pro-cyclist attitude and its commitment to a bike-friendly culture. The city has spent millions installing bike underpasses, traffic-slowing devices, bike roundabouts and ample bike parking, with approximate average expenditures of $200 per person per year on bicycling infrastructure. To further promote bicycling and its benefits to the community, Davis has hired two full-time bicycle/pedestrian coordinators, established city and campus bicycle advisory committees, and used local, state and federal monies to fund a wide range of bicycling facilities and programs.

Over time, this proactive attitude of the Davis community and its public officials has created a unique bicycle culture in which an atmosphere of mutual understanding and respect exists between cyclists and motorists. This culture is promoted from the earliest beginnings: there are no school buses in Davis. Instead, kids are encouraged to bike or walk to school. Furthermore, UC Davis has banned almost all motor vehicles from its central roadways, enabling cyclists at the campus to mostly avoid sharing roads with motorized traffic. The city of Davis even engineered a bicycle signal light that offers cyclists their own separate phase during which they may cross a busy intersection. Not surprisingly, bicycle collision rates at such intersections have been dramatically reduced since their implementation. The ultimate evidence of the city's bicycle culture is its adoption of the vintage high-wheeler bicycle as its official logo.

The results of Davis's commitment to bicycling are impressive. Ninety-five percent of the roads in Davis have clearly marked bike lanes, and 20–25% of all trips in Davis are made by bicycle, more than any other city in America. (Remember that only 1% of trips in Sonoma County are made by bicycle.) Davis is the only city in California and one of only four cities nationwide—the others being Portland, Oregon, and Boulder and Fort Collins, Colorado—to receive "platinum" standing from the American League of Bicyclists, an organization that recognizes communities across the country for their bike friendliness. (Although we still have a long way to go, Sonoma County can be proud that both Windsor and the city of Sonoma have achieved "bronze" status from the ALB for their bike friendliness.)

Davis's commitment to bicycling has also improved its quality of life and its environment. The average BMI in Davis is below the national average, in part thanks to all that pedaling exercise, and the city enjoys reduced traffic congestion, low air pollution, and less demand for parking spaces.

All told, Davis is a striking example of what Sonoma County can accomplish if enough dedicated residents and officials come together and agree upon a common vision for the future of bicycling. If Davis can do it, why can't we?

Rome wasn't built in a day, nor will Sonoma County develop a bicycle culture and roadway system overnight. But there are five simple steps that we can take immediately to get started:

Watch "America's First Platinum Bicycle City." This three-minute video describes Davis's bicycling culture and provides a vision of what is possible for Sonoma County. It's available at fair-companies.com/videos/view/americas-1st-platinum-bicycle-city-davis-ca.

Join the Sonoma County Bicycle Coalition for as little as $35 per year at www.bikesonoma.org. SCBC is the primary local organization working to make Sonoma County more bicycle friendly. It has benefited the community through such programs as Safe Routes to School, the annual Sonoma County Bicycle Expo, the annual Bike to Work Day, and most recently, the "I Bike Sonoma County Century Ride." I recently met with their executive and outreach directors, and I was impressed by how committed and passionate they are about advancing the cause of bicycling in Sonoma County. They can't do it alone, however, so they need your help and support.

Ride your bicycle. Experience the streets of Sonoma County on two wheels. If you can bike to work safely, be grateful, and continue doing so. If you find the commute too fraught with risks, then speak up and try to have your desired improvements implemented. If you have the opportunity, make a weekend trip to Davis and experience bicycling there for yourself.

When driving, share the road. Be patient, and make sure you are not yet another motorist who discourages or even endangers bicyclists. On the flip side, when bicycling, make sure to obey the rules of the road. Bicyclists, after all, need to be similarly respectful of cars.

Advocate for Sonoma County to start its own bike sharing program. Such programs have been wildly successful in Washington, DC, and New York City. Visit www.streetfilms.org/the-phenomenal-success-of-capital-bikeshare to learn more. Recently, I tried out the new bike share program in Salt Lake City and loved the experience. In August, San Francisco launched its own sharing system, with 350 bikes at 35 stations. If our neighbor down south can implement such an innovative program, why can't we?

Sonoma County—with its year-round sunny weather, gorgeous vineyards, gentle terrain, and passionate bicyclist community—has the perfect setup to become the future bicycle capital of the United States. As an avid bicyclist and father of two young children, I dream that one day Sonoma County residents, both young and old, will be able to bicycle safely wherever they wish to go, with mutual respect between motorists and bicyclists en route to their respective destinations. I also dream that all nine cities in Sonoma County will be connected via safe bike routes that bring the county closer together and make it more cohesive.

As a family physician, I hope we can reverse the "diabesity" epidemic and achieve Health Action's vision of making Sonoma the "healthiest county in California."[6] We can help achieve that dream by developing a comprehensive bicycle infrastructure and culture. I firmly believe that with collective focus of mindset and action, we can all work toward the goal of making Sonoma County the future bicycle capital of the nation. ◇

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- **Individual Mandate**—Most individuals are required to have and maintain health insurance effective January 1, 2014. There are exceptions for certain individuals.
- **Penalty**—If you elect not to purchase coverage, you are required to pay a penalty
  - in 2014: the greater of $95/individual (3 per family), or 1% of income
  - In 2015: the greater of $325/individual (3 per family), or 2% of income
  - In 2016: the greater of $695/individual (3 per family), or 2.5% of income
- **Guaranteed issue**—Insurance companies must sell coverage to everyone, regardless of pre-existing conditions, and can't charge more based on health or gender.
- **Health Insurance Exchange**—Individuals without access to affordable, employer-sponsored plans that provide qualifying coverage can enroll in plans offered either through the individual insurance market or through Covered California with coverage beginning January 1, 2014.

  Open enrollment commences on October 1, 2013. If individuals don't enroll with the exchange during the initial open enrollment period, they will have to wait until next year's open enrollment period to obtain coverage.
- **Subsidies**—Individuals and families may qualify for federal tax credits and benefit subsidies only through the exchange. Tax credits are available to those who meet certain income requirements and do not have access to affordable health insurance that meets minimum coverage standards offered through their employer or another government program. Eligibility for tax credits is based on family income and size.
- **Premiums**—Premiums can only vary by age, geography and family composition. They may not vary by gender or health conditions.
- **Annual or lifetime limits**—Individual and group plans may not impose limits on essential benefits.
- **Out of Pocket expenses**—Limits out-of-pocket expenses for co-pays, co-insurance, deductibles, etc. to $6,350 per individual to a maximum of $12,700/family annually.

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Are we too clean for our own good?

Stephen Meffert, MD, and Liana Meffert

Fifty years ago, North American wolves had a bounty on their heads, as humans sought to conquer and control the natural world. Today wolves are being reintroduced into our national parks and are a protected species. Closer to home, local builders may modify or even abandon a new construction project because it endangers salamanders or frogs.

Much as we have undergone a revolution in our relationship with the earth's biome, science writer Moises Velasquez-Manoff suggests that a similar paradigm shift may be in order for the human microbiome: the microorganisms that share our body space. In *An Epidemic of Absence: A New Way of Understanding Allergies and Autoimmune Disease,* Velasquez-Manoff argues that the loss of infections and parasites in humans has caused a dramatic increase in allergies and autoimmune diseases. Through anecdotes, case series, and historical and cross-cultural studies, he correlates the loss of common infections and infestations (which he calls "old friends") with the rise of "modern" diseases. He targets a gamut of conditions: allergies (rhinitis, eczema, asthma), autoimmune diseases (rheumatoid arthritis, multiple sclerosis, diabetes), and even developmental and psychiatric disorders (autism and schizophrenia). A hypothesis of breathtaking proportions

Hookworms

is balanced on a fragile foundation of interesting stories and historical tidbits. And yet . . .

And yet, it would be illogical to think that a co-evolution of infection with viruses, bacteria and parasites would not leave an imprint on our genome and immune system. It is beyond argument that certain bacteria have been and are essential to life. Where would we be without mitochondria or flagella? How would we digest food? Other organisms with no apparent benefit may be regarded as harmful and requiring treatment, yet they existed within the human microbiome for thousands of years. Even ostensibly harmful infections, if present over time and not fatal, would generate adaptation of both host and infectious organism.

It is common for a novel infectious organism to be more severe, or even fatal, in its effects, while a long history of co-evolution generally decreases virulence. Both host and infectious agent make accommodations for one another. Once these adaptations have occurred, it seems reasonable to expect that the absence of either element, in this case an infectious agent, would provoke a maladaptive response. Velasquez-Manoff argues this loss of "old friends" through modern hygiene has manifested in a dysfunctional immune system. This hallmark of evolution is perhaps the book's most convincing argument.

In the book, Velasquez-Manoff describes a walk he takes in New York City. One in every 10 children he passes has asthma. One in six is afflicted with eczema. Twenty people are sitting in a restaurant: one of them has an autoimmune disease. He passes a school, where one out of every 300 children is a victim of type 1 diabetes. He flashes some more data: the rate of type 1 diabetes more than tripled during the last third of the 20th century. He includes graphs demonstrating the dramatic decline of infectious diseases since 1950 and then compares this trend with an equally dramatic increase in autoimmune diseases. This disheartening data invites an obvious question: Are these two trends related?

Velasquez-Manoff has a personal investment in his argument: he suffers from alopecia, an autoimmune disease that robs him of his hair. He began investigating alternatives when he discovered a lack of effective standard treatments for his condition. As he looked for possible solutions, he became aware of the shady world of "worm therapy." Velasquez-Manoff was so convinced by the anecdotal reports that he traveled to Tijuana, Mexico, to be infected with hookworms. Although his results were unimpressive, and he ultimately chose to eradicate the worms, his personal experience pro-

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vides a unique ethos for the book. In addition, his encounters with the black market for parasitic worms (helminths) provide entertaining reading.

One of the main targets for Velasquez-Manoff's worm therapy argument is the relationship between the immune system and allergens, particularly with regard to studies of regulatory T-cells (T-regs). These cells are most notable for their "peacekeeping" role of informing the immune system when it is appropriate to act and when to retreat. In one study, mice were sensitized to dust mites, infected with the mouse equivalent of hookworm, and then re-exposed to the mite proteins. During post-parasitic exposure, the mice had little reaction to the mite proteins. To support the suspected link between T-regs, worms and allergens, the T-regs from the parasite-infected mice were then transferred to allergic mice without worms. The recipient mice also lost their mite allergy. When the T-regs were removed, the allergic reactions reappeared.

T-regs are obviously a critical branch of the immune system, but Velasquez-Manoff argues that some individuals may require the reintroduction of "old friends" to induce the T-reg response necessary for a functional immune system in today's environment. With that, he moves on to another disabling contemporary disease: multiple sclerosis. He introduces us to Dan, a 28-year-old man who wakes up one morning to find that the entire left side of his body has gone numb. A month later, Dan is diagnosed with MS. He begins a course of immune-suppressing steroids, but six months later an MRI reveals new lesions. He starts a new drug called Copaxone, a molecule that mimics myelin proteins. Everything is fine for a few years. Then, at age 31, Dan's left side goes numb again. This time, he loses motor control and has difficultly walking.

Dan begins scouring the Internet for anything that might bring his MS back under control. What he finds is "helminthic therapy" advertising self-infection with hookworm to treat autoimmune and allergic diseases. Dan orders the hookworm kit and presses a bandage of 35 hookworm larvae against his arm. A year later, and six years since his initial diagnosis, Dan has an MRI scan. One lesion has shrunk, another is completely gone, and Dan has recovered nearly full mobility in his left side. This isn't the first story Velasquez-Manoff presents as a sort of "anecdotal miracle." Such stories are hard to ignore, yet reek of the pop science seen too often in alternative medicine.

Perhaps Velasquez-Manoff's most extravagant link is the one he offers between developmental disorders, autism and our immune system. A father finds that his son's most egregious autistic symptoms are relieved temporarily by chigger bites contracted at summer camp. The father realizes this discovery could change his family entirely, relieving them of his son's frequent mood swings and breakdowns. He starts his son on whipworm eggs, and the boy's most disruptive and repetitive behaviors disappear.

A Johns Hopkins survey of families with autistic children reveals that nearly half these children have two or more family members with autoimmune disorders, compared with one-quarter of control families. The chance of autism is nearly doubled if one family member has an autoimmune disease, sextupled if it's three family members. In another study, questionnaires were sent to 30 parents with autistic children inquiring about their children's behavior during fevers (and presumed infection). A clear pattern emerged: the most severe autistic symptoms were subdued when the children had an infection that otherwise occupied the immune system. Velasquez-Manoff suggests this transformation is due to a reduction of central nervous system inflammation as the immune system is responding and regulating itself when actively fighting an infection. Of course, most children become calmer when they are sick, and we might expect autism-related hyperactivity or repetitive behaviors to decline simply on this basis.

Velasquez-Manoff attempts to offset the weaknesses of the available studies and anecdotes with the massive volume of evidence he compiles. The reader is often carried along by his sheer zeal and the compelling nature of his stories. Despite the absence of large-scale randomized studies, he has clearly amassed available evidence to inform and motivate more definitive research.

Although Velasquez-Manoff may be guilty of overreaching, the loss of our "old friends" and the corresponding rise of autoimmune disorders is too coincidental to ignore. His book may produce a valuable paradigm shift in our thinking regarding disease etiology. Despite the early stage of definitive research, he has done an excellent job of highlighting the evolutionary role of the human microbiome and the possible link to the increased prevalence of immune-related disease in the hygienic modern world. ◇

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Why MICRA is Important

Lisa Ward, MD, MSPH, MS, and AJ Kennedy

Did you know there was a year when medical liability insurance coverage premiums rose on average 250% for California physicians? Did you know that, as a result, physicians in California went on strike?

The year was 1975. The issue was the cost of medical malpractice insurance and the presence of a veritable crisis in healthcare delivery across California. Prior to the Medical Injury Compensation Reform Act (MICRA), out-of-control medical liability costs were forcing community clinics, health centers, doctors and other healthcare providers out of practice. Many physicians—particularly those in rural areas or in high-risk specialties such as obstetrics and neurosurgery—were forced to close their doors, either unable to get medical liability insurance or unable to afford it.

After the announcement of policy non-renewal and the increase in insurance rates, thousands of California physicians believed they could not absorb the increased costs of liability insurance, nor could they pass the cost onto patients. Physicians across the state refused to practice until the state took steps to improve the medical liability insurance situation. In May 1975, Gov. Jerry Brown—during his first term in office—called a special session of the legislature to resolve the impasse. The result was a series of bipartisan statutes known as MICRA. For almost 40 years, MICRA has remained the mechanism for controlling the cost of medical liability insurance while defining the environment for processing liability claims through the legal system.

MICRA provides several benefits for patients and physicians:

- Unlimited economic compensation for damages, such as present and future medical costs, lost wages, future earnings, custodial care and rehabilitation.
- An additional $250,000 for non-economic damages.
- Advance notice of a liability claim to give medical providers an opportunity to negotiate a settlement out of court.
- Binding arbitration to settle disputes.
- Limits on contingency fees charged by attorneys so that a higher proportion of awarded money goes directly to plaintiffs.
- Consideration of collateral source payments (such as from personal health insurance) to prevent double compensation.
- Shorter statute of limitations on medical injury claims.

Why should physicians care about a 38-year-old law? We submit to you that California physicians, including members of the Sonoma County Medical Association and the Marin Medical Society, strongly support MICRA. Today, MICRA ensures injured patients are protected and fairly compensated, while also limiting frivolous lawsuits and helping lower healthcare costs. MICRA was intended to, and has been successful in, limiting meritless lawsuits. It has kept physician medical liability rates lower, allowing more doctors and other healthcare providers to stay in practice, and more hospitals and clinics to stay open.

The proof is in the numbers. The table on page 23 compares annual professional liability costs in Sonoma County to comparable counties in Florida, New York and Michigan—three states without MICRA-like reforms. Because liability costs are lower in California, more of our state's healthcare providers can remain in practice, providing broad access to healthcare.

MICRA has saved healthcare consumers billions of dollars by maintaining affordable levels of liability insurance costs while providing reasonable compensation for claims of medical liability that have merit. These reforms have directed precious healthcare resources toward access, safety and expansion for practices led by private physicians, hospitals and community clinics.

Consumer Watchdog, a group with close ties to the Consumer Attorneys of California, has filed a proposed ballot measure that seeks to raise MICRA's $250,000 cap to more than $1.1 million for non-economic damages. The measure also has provisions requiring

Dr. Ward is chief medical officer for Santa Rosa Community Health Centers. Ms. Kennedy is communications director for Californians Allied for Patient Protection.

sweeping intrusions into physicians' lives, including mandatory drug testing and mandated use of the CURES prescription drug database to evaluate physician practices.

A quadrupling of the limit on non-economic damages gives trial lawyers incentive to take on non-meritorious cases against doctors and healthcare providers because lawyers can reap more in legal fees, and the possibility of out-of-court settlements is more likely. More lawsuits against doctors mean higher liability insurance costs and, ultimately, higher costs for patients and reduced access to healthcare services. A study by William Hamm, formerly California's independent nonpartisan legislative analyst, found that merely doubling MICRA's non-economic damages cap to $500,000 would increase healthcare costs in California by $9.5 billion annually.[1]

Consumer Watchdog filed the first version of their proposed ballot measure with the Attorney General's office in July. They filed a revised version at the end of August and may file additional revisions in the coming months. After the final revision is approved by the Attorney General, Consumer Watchdog will be given 150 days to gather the 840,000 signatures needed to qualify the measure for the November 2014 ballot.

If such a ballot measure passes in California, the changes in medical liability payouts would increase healthcare costs for doctors and consumers by billions of dollars per year while reducing patient access. The proposed measure will create even longer lines in emergency rooms, longer waits to see specialists, and reduced access to women's services—making it harder for patients to see their doctors. This could be disastrous, coming at a time when California already faces a shortage of doctors. With healthcare reform poised to expand coverage for millions of the state's citizens, the doctor shortage will become even more severe.

MICRA's supporters are prepared to defend the current law and have raised more than $28 million in opposition to the proposed ballot measure. Local groups are already aligned in support of MICRA, including the Sonoma County Medical Association, Marin Medical Society, Santa Rosa Community Health Centers, Petaluma Health Center, Marin Community Clinics, Sonoma Valley Community Health Center, West County Health Centers, and the California Medical Association.

All of the groups named above belong to Californians Allied for Patient Protection (CAPP), a coalition of more than 800 organizations representing doctors, community clinics, medical and dental societies, nurses, hospitals, EMTs, labor unions, local governments, employers, taxpayer groups and others that support MICRA and are actively opposing the ballot measure. CAPP will be supporting the effort to defeat the Consumer Watchdog ballot measure or any legislative changes.

CAPP is seeking advocates throughout the state who would be willing to meet with legislators, participate in media interviews, and/or write letters or guest editorials regarding MICRA for newspapers. To give supporters the necessary tools to be an effective advocate, CAPP is organizing a series of message-training webinars. These trainings will help you understand how to tell your story about why MICRA is important to you. They will also provide you with background information so you know what to expect in a press interview, legislative hearing or press conference.

If you would like to participate in media training, contact AJ Kennedy, CAPP's communications director, at akennedy@micra.org.

For more information about CAPP and MICRA, you can visit www.micra.org and sign up to receive e-mail updates about efforts to protect MICRA. You can also follow CAPP on Twitter: @MICRAWorks. ◇

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The Medical Injury Compensation Reform Act (MICRA) is California's hard-fought law to provide for injured patients and stable medical liability rates. But this year California's trial lawyers have launched an attack to undermine MICRA and its protections, and we need your help. Membership has never been so valuable!

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2012 SONOMA COUNTY MICRA SAVINGS CHART*

	General Surgery	Internal Medicine (Non-invasive)	OB/GYN	Average
Sonoma County, CA	$28,147	$7,976	$38,865	$24,996
Miami & Dade Counties, FL	$190,088	$46,372	$201,808	$146,089
Nassau & Suffolk Counties, NY	$127,233	$34,032	$204,684	$121,983
Wayne County, MI	$121,321	$35,139	$108,020	$88,160
FL-NY-MI Average	$146,214	$38,514	$171,504	$118,744
MICRA SAVINGS	**$118,067**	**$30,538**	**$132,639**	**$93,748**

S · C · M · A

CMA California Medical Association

Sonoma County Medical Association
2901 Cleveland Ave. #202, Santa Rosa, CA 95403
Phone: (707) 525-4375 • Fax (707) 525-4328

** Medical Liability Monitor - Annual Rate Survey Issue, Vol. 37, No. 10, October 2012. Annual rates with limits of $1 million/$3 million.*

Youth Exposure to Tobacco

Paola Aguilar

Whether we realize it or not, youth are overexposed to tobacco industry products and marketing in our community. The community needs to understand how this targeted exposure can impact a young person's decision to experiment with tobacco at an early age.

Youth are being overexposed to tobacco products and their marketing because in some neighborhoods, tobacco retailers are located close to schools and parks, and even on the way home. Some communities have more exposure than others. In Santa Rosa's Rincon Valley community, for example, tobacco retailers are located far away from places like schools and parks; but in my Roseland community in southwest Santa Rosa, youth have fast and easy accessibility to tobacco on a daily basis (see maps). Roseland has plenty of tobacco retailers and advertisements close to where many students walk to and from school. Seeing these ads and tobacco products all the time makes youth start to become familiar with the brands and even feel like it's a normal part of what they expect to see in their neighborhood.

This exposure starts at a very young age and can lead to youth experimenting with tobacco even as young as 13. This is usually the age when kids start interacting with older teenagers who have connections for getting tobacco products, such as Swisher Sweets (sweet cigars) or electronic cigarettes. For example, one of my peers is 16 years old and is able to get tobacco products from a high school senior. Since the senior is 18, the legal age to buy tobacco, he is able to get Swisher Sweets at a store that sells tobacco close to our school. You can get two for a dollar, so it is affordable and not a big deal.

Tobacco retailers are not only located close to our schools and parks, but also *in* our neighborhoods. Another example of how teens can get tobacco products really easily is when they go to house parties or *quinceañeras* that are usually hosted at places in our neighborhood. Most people living in Roseland are Hispanic, and they have a tradition of throwing huge birthday parties—*quinceañeras*—when their daughters turn 15. It is only a short walk from many of these parties to a tobacco retailer, where youth can easily get a cheap cigarillo (little cigar), that comes in a lot of sweet and fruity flavors like grape, pineapple and vanilla.

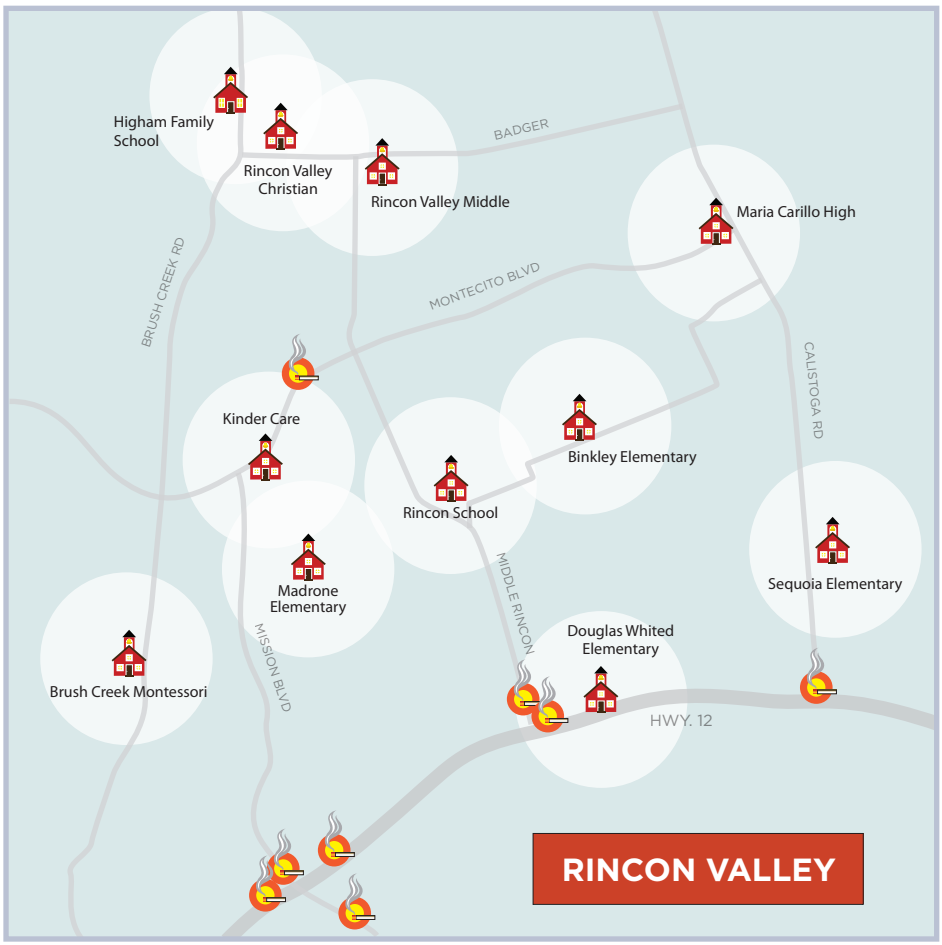
The tobacco industry works very hard to make their products appealing to youth. If you look closely at their products and marketing, you can see that everything has been designed to catch the attention of a young person. For example, they place plenty of ads all over their windows and even on sidewalk poles that make the tobacco products look "cool" and "in style." Inside, they place tobacco products close to the checkout area where everyone can see them. Tobacco products that are close to the checkout counter even look similar to things like gum and candy so they can be confusing to both the customer and the worker. The marketing of e-cigarettes has been promoted a lot with youth and highlights all of the "positive" things about an e-cigarette, especially that it tastes and smells really good. The e-cigarettes also look a lot like pens and are hard for parents to notice, which is another reason why they are popular with youth. The tobacco industry does not mention a single fact about the damage that e-cigarettes can cause, and youth are seeing this misleading information everywhere.

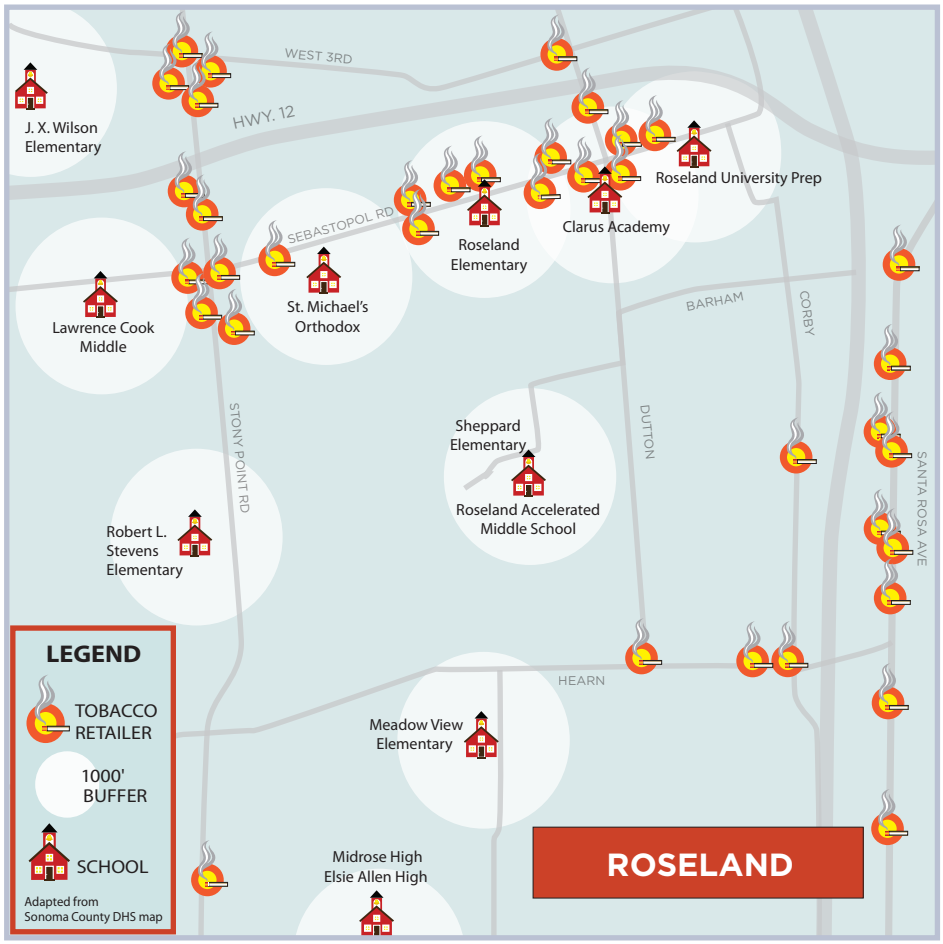
For the past three years, teen educators from Project TRUE (Teens R U Educated?) in Santa Rosa have been going around to schools from 6th grade all the way to high schools and giving presentations on how bad tobacco products are and the way the industry tries to trick us into buying these products. Project TRUE teen educators are now starting to present this information to more people in the community. Two Project TRUE members, Jessica Garcia and Mireya Ruiz, have created a presentation about youth exposure to tobacco in our community. The presen-

Ms. Aguilar, a student at Roseland University Prep in southwest Santa Rosa, is a peer health educator for Project TRUE.

tation includes a comparison between Rincon Valley and Roseland that shows the difference in placement of retail outlets close to school and youth. Jessica and Mireya gave the presentation this summer to various groups like the Department of Health Services and the Maternal Child and Adolescent Health Advisory Board to help educate these community members about the issue of youth exposure to tobacco.

Also this summer, Project TRUE members and other youth helped with a county-wide survey of tobacco retailers. We surveyed the variety of tobacco products sold at each store, what kinds of ads stores had, and how close tobacco products were to the checkout counter. Our hope is that this information will be used to help pass laws that will require retailers to not sell tobacco close to schools and parks and to limit tobacco ads. Youth are our future, and I think it's important for the community to try to make our environment healthy so we can grow up to become healthy adults. ◇





Project TRUE

Project TRUE is a youth-driven, peer health education program from the Northern California Center for Well-Being. In addition to the tobacco-related efforts led by Project TRUE members, the Center also addresses tobacco as a community health issue by promoting smoke-free environments at multi-unit housing across Sonoma County, as well as reducing the incidence of smoking by pregnant women and women with young children.

Students from Project TRUE have proven themselves to be effective anti-tobacco advocates. They have studied the issues, and they have educated their peers and the community on how advertising and easy access impact youth decisions to smoke. Their study of retail outlet density resulted in some remarkable data, adapted for display in the accompanying maps.

—Ayano Healy, Center for Well-Being

—Rebecca Munger, Sonoma County DHS

Immunotherapy for Breast Cancer

Jarrod Holmes, MD

Breast cancer is the most common cancer among women in the United States, and it remains a significant cause of cancer-related mortality. According to the American Cancer Society, an estimated 230,000 new cases of breast cancer will be diagnosed in 2013, and nearly 40,000 women will die from breast cancer this year.[1] Standard therapy with surgery, radiation, chemotherapy and endocrine therapy has increased overall cure rates over the last several decades. Despite improvements in therapy, however, there are still a substantial number of women at risk for breast cancer recurrence and death, prompting the need for additional treatment options.

Novel therapeutic approaches to cancer treatment have emerged in the past two decades to complement standard therapies. Immunotherapy, which uses the body's own immune mechanisms to target and kill cancer cells, is among the most effective of these newer approaches. At the heart of the immune responses is the antigen, a substance (usually a carbohydrate or protein) that elicits a specific immune response from the host immune system.

As understanding of the immune system and its interactions with tumors has evolved, researchers have developed therapies that capitalize on the immune system's ability to target abnormal cells.[2] There are two basic ways these interactions can develop. One is via tumor-specific antigens, those antigens that are unique to the cancer; the other is through tumor-associated antigens, those antigens that are expressed uniquely in cancer cells compared to normal cells.[3]

Dr. Holmes is a medical oncologist and hematologist at the Redwood Regional Medical Group in Santa Rosa.

One well-studied target for cancer-related immunotherapy is the human epidermal growth factor receptor (HER2/neu) protein, a transmembrane tyrosine kinase.[4] Expression is usually quantified by immunohistochemistry on tumor samples on a scale from 1+ (low) to 3+ (over-expressing). HER2/neu is expressed in 70–80% of breast cancers and over-expressed in about 20–30% of breast cancers.[5] Over-expression results in a more aggressive phenotype and poorer clinical outcomes.[4–6] Because HER2/neu is not expressed at significant levels in normal adult human tissues, it represents an excellent target for cancer immunotherapy.

Trastuzumab (Herceptin) is a humanized monoclonal antibody that targets the HER2/neu protein.[6] The addition of trastuzumab to chemotherapy resulted in significantly improved outcomes in women with metastatic breast cancer,[7] ultimately leading to its approval by the FDA as one of the first cancer immunotherapies. Several large randomized trials demonstrated the benefit of trastuzumab in the preventive setting. One year of trastuzumab in addition to standard chemotherapy resulted in a relative risk reduction of 50% over chemotherapy alone. This immunotherapy is now standard of care for preventing recurrence of breast cancer in women with HER2/neu over-expressing tumors after surgery for stage I-III breast cancers.[6]

Not only is the HER2/neu protein a good target for monoclonal antibody therapy, it is highly immunogenic, and therefore an excellent source of tumor-associated antigens. A number of immunogenic epitopes from the HER2/neu protein have been described, including the immunogenic peptide E75 (HER2/neu 369-377).[8] E75 is a nine-amino acid peptide derived from the extracellular domain of HER2/neu. The peptide is dominantly recognized by cytotoxic T-lymphocytes, and it induces a peptide-specific immune response.[9]

The safety and immunogenicity of E75 was initially demonstrated in several small studies of patients with metastatic breast and ovarian cancers. In these trials, patients with metastatic cancers were inoculated with E75 plus an immunostimulant. E75-specific responses were elicited in all of these trials for up to a year. Unfortunately, no real clinical benefit was demonstrated, likely due to the burden of disease in these advanced cancer patients.[9]

During my hematology/oncology fellowship with the Navy, I worked with the military's Cancer Vaccine Development Program. Our group focused on E75 as a preventive vaccine, treating patients who were cancer-free but at risk for recurrence at the time of enrollment. After completing standard-of-care treatment, patients who were HLA-A2 (human leukocyte antigen A2)

positive were vaccinated according to various treatment groups, and patients who were HLA-A2 negative served as controls. Quantification and activation of cytotoxic T-lymphocytes (CTLs) were used as *in vitro* measurements of specific immune response. *In vivo* responses were demonstrated using delayed type hypersensitivity (DTH) assays; post-vaccination DTH was significantly larger.[10] Specific immune responses were demonstrated in patients receiving vaccine compared to control, and optimal dose and schedule of E75 were defined.[11] The best immunologic responses were seen in patients with HER2 1+ (low) or HER2 2+ (intermediate) expression.

The recurrence-free survival rates at a median follow-up of 18 months was 5.6% in the vaccinated group compared to 14.2% in the control group ($p=0.04$).[9] This statistical significance was lost over time, corresponding to a waning immunity, so we instituted a booster program. The booster inoculations proved safe and effective at sustaining an immune response.[12] Although these studies were designed to determine dose and schedule, rather than efficacy, of the E75 vaccine, the results are promising. Among patients who received the booster vaccine, none have recurred, compared to 13% of the control group.[13] Furthermore, E75 is safe. In the trials described above, over 100 patients were vaccinated, and the most common toxicities were grade 1–2 injection site reactions (erythema, induration) and grade 1–2 systemic symptoms, predominantly flu-like symptoms, bone pain, arthralgias and myalgias.[9–13]

Based on these clinical trial results, E75 is undergoing further study. The international PRESENT trial, for example, is exploring the role of E75 in recurrence prevention for HLA-A2 or HLA-A3 breast cancer patients.[14] In this randomized, blinded, placebo-controlled trial, high-risk breast cancer patients will receive E75 plus granulocyte macrophage colony-stimulating factor (GM-CSF) six times, followed by four boosters every six months to determine the efficacy of E75 in preventing recurrence.

Researchers are also exploring the combination of E75 with trastuzumab. As mentioned above, trastuzumab significantly decreases recurrences in breast cancer patients with HER2/neu overexpressing tumors. Data from small trials, however, supports benefit of trastuzumab in patients with lower levels of HER2/neu expression. The ongoing National Surgical Adjuvant Breast and Bowel Project B-47 trial is exploring the potential benefit of one year of trastuzumab in these patients, which may greatly expand the role of monoclonal antibody therapy in the adjuvant breast cancer setting.[15] To date, the trial has demonstrated a synergistic effect *in vitro* of trastuzumab and CTL derived from vaccinated patients, and there has been no increase in toxicity from combination of trastuzumab with HER2/neu derived peptide vaccines.

Given the potential emerging roles of both trastuzumab and E75 in this population of patients, Redwood Regional Medical Group in Santa Rosa is serving as the lead site for a randomized trial of trastuzumab plus E75 plus GM-CSF vs. trastuzumab plus GM-CSF alone.[16] The trial is being conducted in collaboration with Galena Biopharma and Genentech, and it is projected to enroll approximately 300 patients over the next three years.

Adjuvant breast cancer therapy has evolved rapidly over the last four decades, with chemotherapy and endocrine therapy still playing critical roles in prevention of recurrence. Cancer immunotherapy, which targets cancer cells by using the same molecular mechanisms as our innate immune system, has emerged for certain populations as the standard of care. Cancer vaccines have proven safe and effective at stimulating an immune response. The efficacy of cancer vaccines in preventing recurrence is a promising, exciting area of ongoing research. ◇

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More Musings on Genetic Breast & Ovarian Cancer

Brad Drexler, MD, and Genevieve Drexler, RN, PHN

You can live to be a hundred if you give up all the things that make you want to live to be a hundred.

—Woody Allen

Patient #1, a current patient of Dr. Drexler's, is now 50 and has recently gone through menopause. Her mother had breast cancer at age 62. There is no other family history of breast or ovarian cancer. She does have a history of endometriosis, but none was found at her hysterectomy, done for bleeding issues. Because of anxiety about breast cancer, and a scare based on a false-positive MRI, she was tested for BRCA gene abnormalities about two years ago. Even though she does not have the typical family pedigree, she tested positive for the BRCA2 gene abnormality. Risk-reducing bilateral salpingo-oophorectomy (BSO) was recommended, but the patient decided to wait until she had gone through menopause, which has recently been confirmed. However, she continues to waiver about her options and her decision for surgery. Meanwhile, she is starting on chemoprophylaxis with the anti-estrogen agent raloxifene (Evista).

Dr. Drexler is an ob/gyn with offices in Healdsburg and Santa Rosa. Ms. Drexler graduated from SSU Nursing School in May of 2013.

Patient #2 is a 38-year-old female with a family history of ovarian cancer who tests positive for BRCA1 abnormality and elects to have a bilateral mastectomy. She decides to put off BSO until she turns 50. After sending a letter to the editor of her local newspaper, she is publicly criticized for her decision to have a mastectomy. One of her aunts dies of breast cancer less than two weeks after the letter is published.

Patient #3, the subject of Dr. Drexler's 2005 *Sonoma Medicine* article on hereditary breast and ovarian cancer,[1] is now 57. Her mother and grandmother (both Ashkenazic Jews) had both developed breast cancer in their late 40s. The patient had only a limited BRCA screen done, and it was negative. Due to cost, she elected not to have the full screen done. She has decided not to have any prophylaxis or extra testing, and she continues to do well. We have not yet had a chance to review the recent and pending changes in test availability discussed below.

Abnormalities in two genes, BRCA1 and BRCA2, are responsible for most inherited breast cancers, and an estimated 90% of genetic cancers that include both breast and ovarian cancer. These genetic abnormalities are uncommon, however, occurring in only one out of 800 to 1,000 women, and they are responsible for only 5–7% of all breast cancers.

Researchers suspect that BRCA1 and 2 play an important role in cell repair and DNA transcription. This characteristic holds true for most genetic cancer genes, including the two others most predominant in breast cancer: TP53, whose abnormalities cause Li-Fraumeni syndrome, and PTEN, which causes Cowden's syndrome. Mutations of each of these genes are inherited in an autosomal dominant fashion, with 50% of offspring affected. In this article, we will focus on patients with the BRCA mutation.

BRCA Mutation Carriers

Women with BRCA gene mutations are estimated to have a 60–85% lifetime risk for breast cancer.[2] Their cancers tend to present at a younger age, are more aggressive, and are more likely to be bilateral. About 20% of carriers develop breast cancer by age 40, and 50% by age 50. Ovarian cancer risk is also increased in these patients, estimated at 15–65%, depending on gene variant. Risk is also increased for male breast cancer, prostate cancer, melanoma, pancreatic cancer and uterine cancer—but probably not for colon cancer or other cancers.

Testing for genetic breast cancer syndromes can easily be done in the office or lab setting with a saliva, cheek swab or blood test. Testing an affected rela-

tive is more beneficial than testing an unaffected patient (where testing may not be informative). Pre-test counseling, however, is extremely important, as well as the availability of post-test counseling. Counseling in these patients is quite complicated and must be tailored to each patient's gene diagnosis, age, and medical and personal needs.

Compared to patients with the BRCA1 gene, ovarian cancer in patients with the BRCA2 gene starts later, usually after age 50, so patient #1's decision to wait to have her BSO until then is not unreasonable. Patient #2 states in her letter that she has the BRCA1 gene, but was told that the ovarian cancer risk for the variant she carries was also low until age 50 (normally BSO is recommended once childbearing is no longer desired).

Patient #2 is the movie star Angelina Jolie, and her hometown newspaper is the *New York Times*. The outraged responses to her decision to have a bilateral mastectomy (including some from physicians) and her brave letter are what motivated us to update Dr. Drexler's earlier article.

Patients at high risk because of a positive BRCA test have several options. General recommendations for all patients regarding risk reduction apply to these patients as well: exercising, avoiding tobacco exposure, limiting alcohol use, and maintaining a healthy weight.

BRCA Screening vs. Prevention

Yearly mammograms starting as early as age 25 have been recommended for these patients, but they may have an increased risk of breast cancer with mammogram radiation exposure before age 30,[3] and mammograms are less sensitive prior to age 35–40. Mammograms in general also appear to have a lower sensitivity in these patients (around 35%). Yearly MRI screening with contrast is also recommended and has a much higher sensitivity at around 80%, but at the price of a much higher false positive rate; it is also expensive.[4] There have been no studies comparing yearly MRIs to those occurring every other year or every 3–5 years. The other difficulty with screening is that once these patients have developed cancer, their cancers are often more aggressive, with worse outcomes, than in the general population, even when the cancer is at an early stage.[5]

Bilateral mastectomy is clearly the most protective strategy for patients with a positive BRCA test, decreasing breast cancer risk by 85–95%.[6] As many as 57% of these patients are found to have precancerous lesions at the time of this surgery. However, because of the cosmetic and psychological changes involved, only a minority elect this procedure.

BSO, which can be done with minimally invasive laparoscopy, reduces breast cancer risk by 30% to 50% in pre-menopausal patients, and greatly reduces ovarian cancer risk.[7] It is important to remove the entire fallopian tubes and ovaries. Studies from Canada have suggested that the fallopian tubes may be responsible for as many as two-thirds of ovarian cancers.[8] BSO is the most common intervention in these patients in the United States. These patients also have an increased risk of uterine cancer, but inclusion of hysterectomy remains controversial.

One large prevention trial found that prophylaxis with the estrogen blocker tamoxifen in patients with increased risk decreased the incidence of breast cancer by about 50%, and the drug is now approved by the FDA for this purpose. Unfortunately, tamoxifen increases the risk of uterine cancer, with an incidence of around 1% per year.[9]

Similar findings have been noted with other anti-estrogen drugs in smaller trials, including raloxifene and aromatase inhibitors. Although aromatase inhibitors may be more effective than other anti-estrogen drugs, they are associated with increased side effects, and are only effective in post-menopausal women. Because of the increased incidence of receptor-negative breast cancers in patients with hereditary cancers, there was some initial concern that these agents may not work in these patients. However, a number of studies show similar efficacy in these high-risk patients, and they are now commonly recommended.[10]

Birth control pills do decrease the risk of ovarian cancer, and appear to be effective in this population. Initial concerns that birth control pills may be associated with an increased risk of breast cancer in these patients have not been supported by newer studies with modern low-dose pills.[11]

Stanford Medical School now offers a helpful online tool to assist affected patients and their physicians in making decisions about breast and ovarian cancer. The tool, available at brcatool.stanford.edu, compares the effects of screening, mastectomy, and BSO on risks, based on age and gene type (BRCA1 or 2).

Genetic Breast Cancer Testing

Our understanding of the scope of BRCA-related tumors has changed significantly in the last few years. The list of related tumors that increase suspicion now includes pancreatic and prostate cancer. New recommendations by the National Comprehensive Cancer Network on when to perform testing have become more lenient. The recommendations now include any patient with ovarian cancer; breast cancer before age 45; triple-negative cancer before age 60; or basically any two instances of BRCA-associated personal or familial cancer, even if only one was early breast cancer (prior to 50); and in any patient with one instance at any age and an Ashkenazic Jewish background. In addition, patients with very early breast cancer (before age 30) are now recommended to have additional testing, for the TP53 gene abnormality (Li-Fraumeni syndrome). Indications for testing for the Li-Fraumeni syndrome, the Cowden syndrome, or the Lynch syndrome are too complex to review here, but are available for physicians at the NCCN website at www.nccn.org with a free one-time registration.

One reason patient #3 decided not to do further testing was the cost of the full BRCA gene workup. One reason for the high cost was that the genes had been patented by a single corporation, Myr-

Image from the Ambry Genetics website after the June 2013 Supreme Court decision.

iad, which charged expensive licensing fees and essentially had a monopoly on the test. This situation was addressed in June, when the United States Supreme Court ruled that Myriad couldn't patent a naturally occurring gene.

Immediately, a number of companies jumped into the fray, offering reduced-cost gene testing ranging from $575 to about $2,200. At least two of these companies—Ambry and Gene by Gene—have been sued by Myriad, to stop them from performing the test. Myriad is asking for treble damages for any lost profits. At this time, both companies continue to offer the test, as does GeneDx. A number of other labs, including Quest, announced that they would be offering BRCA testing after the Supreme Court's ruling. It will be interesting to see how the risk of lawsuits may affect the availability of alternative lab testing, or if the tests continue to become more affordable and available.

Ambry and others also offer a "BRCA Plus" test with six genes, including Cowden and Li-Fraumeni mutations. In addition, Ambry offers a 16-gene panel, including genes that may increase the risk for breast cancer; but the panel does not include Lynch syndrome testing. Current guidelines don't recommend this more extended panel, and screening and treatment recommendations in patients with moderately increased risk are no different than routine screening guidelines. GeneDx offers a 26-gene panel, and Myriad is planning a 25-gene panel, both of which include Lynch Syndrome. All these panels are more expensive than the BRCA stand-alone test offered by each company.

Under the Affordable Care Act, starting in October of this year, most health plans that are not grandfathered will be required to cover BRCA testing if ordered by a physician. However, Medicare will not cover the test, except in patients who already have an associated cancer.

The era of personalized genetic medicine approaches. For hereditary breast and ovarian cancer syndrome, this era has already arrived, greatly to the benefit of affected patients and their families—even though the available technology is in flux. It is important that we, as physicians and health professionals, begin to incorporate these technologies in a way that equally addresses individualized and compassionate patient care. ◇

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Completely in the Present

Jimmy Wu, MD

Dr. Wu performing Tai Chi on the Sonoma coast.

Boy, what a crappy day today! That one patient was really demanding, wanting her opiate and benzo regimen changed the way she wanted . . . and what about that other one who just admitted to me that he's been using heroin the whole time we've been treating his chronic pain . . . oh, and let's not forget having to deliver bad news regarding a new breast cancer diagnosis in Mandarin. What a tough . . .

Suddenly, the familiar sounds of the traditional Chinese *erhu, pipa* and *dizi* interrupt my thoughts as the instruments merge to create a serene melody that glides effortlessly out of my boom box. As the sound waves reach my outer ear, I sense nothing . . . nothing but the subtle bending of my knees followed by an ever-so-slight lean to the right. I breathe in and out, noticing my arms slowly lifting up, ever so gently. As I continue this graceful choreography of movements, I find myself transcending the realm of conscious thought. Going from "brushing the wild horse's mane" to "repelling the monkey," my mind and body instantly shift from a position of stress to a string of blissful movements. I perform "cloud hands" and can see without judgment the above negativity floating by my passing hands. It was as if the day never happened.

You might ask, "What is this elixir of rejuvenation that keeps me from the threat of burnout?" It is the same tonic that millions of elderly people have used in parks all across China for the past thousand years. It is the same secret that was mysteriously passed down from family to family in China for centuries until it was finally introduced to other parts of the world in the 1920s and the United States in the 1960s. Despite its humble and enigmatic beginnings within the legendary Wudang Mountains, Tai Chi Chuan is an internal martial art form now practiced all across the globe for health, self-defense and spirituality.

I started training in the 24-step Yang form of Tai Chi Chuan when I was in medical school at the University of Wisconsin. I had done martial arts for a long time, but I felt that my body needed something gentler and more intuitive. I went to my first Tai Chi class and have not turned back since.

Besides the physical beauty of the movements, I was attracted to Tai Chi Chuan's philosophical context within Daoism. *Tai Chi Chuan* literally means "fist of the supreme ultimate." The Tai Chi is essentially the force that creates duality—the yin and the yang—from nothingness. It is what ultimately connects us, as human beings, with each other and with the rest of the universe. In reading more about the philosophical background of Tai Chi Chuan, I appreciated how this practice began to branch out into my way of living. Some people seek truth through meditation, some through yoga; through my Tai Chi practice, I have fostered my own way of seeking out the truth.

I would be lying if I said that I practiced Tai Chi daily. Through the rest of medical school and residency, I was happy to practice once a week! However, through this consistent if not constant cultivation of my Qi (different from the "Chi" in Tai Chi), or inner essence, I developed a better sense of self and improved my energy level.

As I journeyed through medical school and discovered my love for the patient-doctor relationship, I realized that family medicine was my calling. While the development of these relationships is what keeps me passionate

Dr. Wu is a family physician at the Vista Family Health Center in Santa Rosa.

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about my job, they can be double-edged swords. Especially working with the underserved population, patient visits can be emotionally draining. Since I also knew that working with the underserved was what I wanted to do for a career, I needed something that would help with "energy rejuvenation." Then I realized that this tool for "energy rejuvenation" had already been in my arsenal for several years!

With my Tai Chi Chuan practice, I have a way of refilling my gas tank. This serves both me and my patients well. When I am tired and inattentive, I feel that I am no longer present and therefore provide inadequate care. Fortunately, Tai Chi Chuan has helped me maintain a level of vitality that translates into good presence and quality medical care. When I examine and therefore touch my patients, I feel that I am able to transmit positive Qi into their circulation.

Since there is good evidence for the benefits of Tai Chi Chuan in conditions such as poor balance, depression, anxiety and chronic pain, I have also been teaching free Tai Chi Chuan classes to patients, staff and residents at the Vista Family Health Center. In the spirit of the adjacent residency program, I have felt the desire to pass on the wisdom that has helped me through difficult times and challenges. The teaching has further enhanced my own relationship to my Tai Chi Chuan practice.

As the music chimes on and almost comes to a close, I complete the 22nd and 23rd movements of my form. My body then naturally and automatically pivots into the same space as my beginning movement. My arms, now completely relaxed and loose, slowly gather the Earth and Heaven Qi around me, followed by an almost imperceptible return to the familiar starting position. While I physically return to the same space as five minutes ago, my mind and breath are now completely in the present . . . without judgment, and in a good place. ◇

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Love Letter to a Community Hospital

Stacey Marie Kerr, MD

Note: *After the 1994 Northridge earthquake, the California Legislature passed a law requiring hospital buildings to be retrofitted or replaced so they would remain standing after an earthquake. Community Hospital—now called Sutter Medical Center of Santa Rosa—is one of those being replaced.*

Dr. Kerr in front of Community Hospital with her parents, Barbara and Edward Kerr, 1989.

Places hold memories. Places and spaces hold the spirit and stories of those who were there.

I know this because I was raised the daughter of a military man, and I lived nowhere for longer than two years while growing up. I have made pilgrimages to places I lived, just to see that they were real and to touch that particular part of my history. Like many military brats, I piece together the physical reality of my formative years to create something that looks like a normal childhood.

I lived for three years at Community Hospital. I like to think that I grew up as a family physician within those walls. The hospital holds memories that cause a visceral reaction when I am there, even more than 20 years after graduating from the hospital's residency program. Those place-memories will be lost when the hospital moves to its new location—a new place that will be safe from earthquakes but empty of spirit until the years of life and death and healing fill it up again.

The memories within Community Hospital's walls for those who lived and worked there are unique to each individual, and not everyone will be aware of the feelings evoked by the hospital's history. For now, I honor the space where I grew up.

Walking through the emergency department, I remember the night I placed my hand into an open chest, grasping a man's bare heart to squeeze life into what was no longer working. I pressed in a rhythmic pattern—evenly spaced contractions that would mimic the natural beat of an uninjured heart. After a few minutes, I felt the heart begin to respond, and I began to work with it. Like a slow dance, together that heart and I reestablished a functional beat. When the heart felt like it was ready to beat on its own, I slowly released my hold and watched as it continued to pump. Every time I pass that room in the ER, I remember those minutes when my hand saved a life.

The courtyard garden with Dr. Gude's healing plants from around the world could tell stories of countless patient care lessons. I gained weight by stress-eating cafeteria food, but I was given guidance that taught me more than what Western medicine had to offer. That courtyard was the place where I was introduced to integrative medicine, teaching me that there is more to healing than pharmaceuticals.

The second floor, Medical-Surgical 2, takes me back to the day my own father died there. He spent his last hours in a room whose only view was of the ducts above the ER. In that room, a compassionate cardiologist taught my atheistic father about hearts and God while I listened from a corner, soaking in one more teaching miracle from a wise attending physician. The desk at the nursing station is where I wrote in my father's chart, pronouncing his death. The walls remember.

One floor above, if the walls in MS3

Dr. Kerr is a retired Santa Rosa family physician.

could talk, they would tell of an overwhelmed new medical school graduate who did not yet know how to discharge a patient from the hospital. They would tell the story of that same graduate who learned how to care for patients in the ICU, how to listen and examine with her hands, and how to call an attending in the middle of the night to ask for help without offending or disregarding his or her need for sleep.

But it is the fourth floor of Community Hospital that holds the most memories. There the whispering voices of angels guided my training through the three years I lived within those walls. Countless babies were born into my hands in those rooms. In one room, I heard an attending teach me to be patient and allow Mother Nature to take her course. Another room echoes the memory of a particularly difficult but successful newborn resuscitation with the welcome sound of that newborn's cries. Even the stairwell remembers the tears of the ultrasound tech who found a baby floating outside a ruptured uterus—not dead as we feared, but alive and waiting for delivery. The operating room remembers our swift and skillful work to save both mother and child in spite of the odds against their survival. My own daughter and grandson's lives were saved when he was delivered by emergency cesarean in that same operating room while I was chief of obstetrics, post call. And eventually I wrote and published a book about births on the fourth floor—births that allowed women to realize their power. Those births continue to inspire women today. The fourth floor holds the memories of all those stories and more.

Community Hospital has birthed countless family physicians over the last 75 years—good doctors, many of whom have stayed in our community to practice and teach, and many of whom are leaders in healthcare across the world. The three years of my residency were rich with learning and experience that I had worked long and hard to obtain. Santa Rosa was the brass ring of family practice residencies, known for being one of the very best in the country. I knew I was lucky. I knew I was blessed to be within those walls. The friendships we forged with other residents, with our attendings, and with our patients last to this very day. The memories are vivid, and I cannot say I am happy to see the hallways that hold those memories abandoned.

I know the new facility will make memories of its own and that new residents will live within freshly painted walls and eventually look back on the things that happened to them there. But my memories, and those of many others, are embedded in that lovely old hospital on Chanate Road. Those memories will continue to live within us, but I do not take lightly the loss of that place, those rooms, and the life we lived there where we learned to be doctors. ◇

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Rules of Teleconference Engagement

Marshall Kubota, MD

As a regional medical director for a growing, multi-county health plan, I am frequently at one end of a teleconference—either video or phone—doing what I can to both understand and participate in the meeting. As our health plan continues to expand, more of our meetings will take place with participants in places other than our main office.

Since there is "nothing like being there," we should make the best of "not being there" in our conferences. Part of that effort should be a modicum of teleconference etiquette at both ends of the string—etiquette that makes the meetings more satisfying in communication, if not in content. No understanding, no content. It's also about respect and keeping our promises to our tuned-in participants. Background noise, low-volume voices and squeaky chairs all diminish the enjoyment of the moment. So let's set down a few easy-to-follow rules, then coach and remind each other during the process—which is much easier than, say, mastering electronic health records.

Dr. Kubota, a Santa Rosa family physician, is a regional medical director for Partnership HealthPlan of California.

Audio Conference (everyone)

Hear ye! Hear ye! When possible, move close to a microphone at your site. If you want to be heard, make sure you can be heard. Others around the table at your site can hear you, but those listening in remotely might not. Speak in a volume that reaches the person farthest away in your room. We can always turn the volume down at our end, but turning it up may not solve the problem, and it amplifies white noise as well.

I am the king of the world! When you talk, announce who you are, so listeners will know.

Incredible shrinking violet. Once you **speak up, stay up** and don't fade away to some unintelligible . . . . . .

Stand away from the mike when not speaking! In contradistinction to No. 1 above, we often have a stack of handouts, papers, agendas and the like. Shuffling these near the mike disturbs the listeners at the other end. All those papers sound like a herd of stampeding origami buffalos.

Can I have a sidebar judge? No. Side conversations and multiple conversations are amplified differently because they are picked up differently by the mikes. Hold these conversations outside the room, or try silent note passing, just like in elementary school.

Bic tics. These may not bother you, but this is because you are the source of the irritation. Be cognizant of those many little stress-relieving actions and habits, including:

- Ballpoint pen clicking
- Finger and pencil tapping
- Squeaky chair twirling (oil the chair!)
- Sewing machine legs

Theater effect. Don't you just love the candy-unwrapping jerk next to you at the critical point in "An Affair to Remember," when Cary Grant realizes that Deborah Kerr is paralyzed? I like yogurt as much as the next guy (actually I don't), but those plastic cups are

little megaphones amplifying the scraping, scraping, scraping of the spoons, spoons, spoons (literary reference as Halloween approaches).

Audio Conference (main host)

Welcome! The main host is responsible for making people at distant sites feel respected and engaged. The main host should also do everything possible to ensure that the technology is sufficient, and that the distant site can hear all that is being discussed.

Using the blunt end of a number 2 pencil, break the seal on your test booklet. At the beginning, check that everybody in attendance has the handouts so copies might be sent off if they're missing.

It's rude to read over someone's shoulders. But what else can we do? No handouts were sent to the distant site. Oh, I forgot, we can't read over your shoulders. Rude, rude, rude. Please send handouts to distant sites in advance of the conference. All handouts, all participants, always.

Just the fax, ma'am. Don't forget that all colors will fax as shades of grey, and that red turns to black.

Fifty shades of grey. You may start with a nice colored chart, but when you fax the chart or the distant site prints an emailed chart, once again the chart turns monochrome. Consider using fill textures on bar graphs, and dotted or dashed lines on line graphs.

Lost in cyberspace. Warning! Danger! Paginate the handouts if you can, and keep the listening/viewing audience up to date on where you are.

What am I, chopped liver? Introduce the audio conference participants and continue to recognize them throughout the discussion: "Any questions from those on the line?"

Audio Conference (listeners)

Harpo. The most critical button in the conference is MUTE, particularly at multisite conferences. We really do not need to hear your dogs or kids or your side conversation in the background. Learn how to use your MUTE button. I'll speak no more on this topic.

Doobie, doobie, doo. The HOLD button can initiate the wonderful HOLD MUSIC that is shared with everyone in the conference. Silence is golden and is achieved by MUTE, not HOLD.

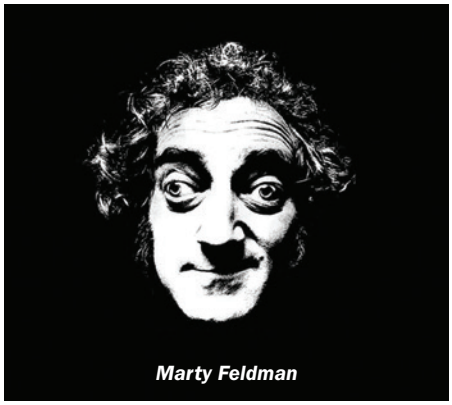
I can't read your mind! If there is a problem, let the source know.

Video Conference (everyone)

Audio rules apply. See above.

I can see you! You may think you are alone, but you are not! Everyone sees everyone. If you can set up your monitor to view yourself as well as the distant site, you can see what they see. It's not always a pretty sight.

Zoom, zoom, zoom. If someone is adept at camerawork, move to the person speaking and zoom in. Close-ups are so much more personable than 15 tiny people with 15 tiny heads and 15



Marty Feldman

tiny mouths talking. Some systems can be set to focus on different points in the room or table with the push of a button. Ask your IT department (not that they're busy with anything else, like your complaints about the electronic record).

Nice shot of the back of your head. As the presenter, try to sit in view of the camera. I know it diminishes your God-like presence, but your online participants would like to see who is speaking. Otherwise, why video? Also, remove those foreground chairs with their backs to the camera. Check the view ahead of time.

Expecto patronum! If you and your room are backlit—say by big windows with a glorious vista of Northern California—your camera compensates for this light by shutting down the aperture and making everyone and everything in the room dark and shadowy, like a dementor in a Harry Potter movie. Such a view makes me feel cold and sad. Check the "self view" on your monitor and see if it is satisfactory.

Video Conference (main host)

Like looking into the wrong end of a telescope. Introduce, engage and pay more attention to those at a distance and therefore at a disadvantage.

Twilight Zone. "Imagine, if you will, a PowerPoint presentation on the screen that you cannot see, with no handouts provided. A dimension of no sight, a dimension only of sound." Doo, doo, doo, doo. Really, really, really irritating (really). Also, paginate the slides and refer to them by number.

Video Conference (viewers)

Marty Feldman effect. I loved the late Marty Feldman, the English writer, comedian and actor with bulbous fish eyes. By the way, you look like him if you are too close to your laptop camera. It's okay, just thought you might want to know. Corollary: the "up your nose" shot (no, I didn't misspell *shot*).

I can't read your mind 2. See "I can't read your mind" above.

In Conclusion

For both audio and video conferences, **consider a site-specific checklist.** The list can show where to place the microphones, which seats are invisible, and which seats have their backs to the camera. It can also include reminders to check the lighting and make introductions, along with instructions about how to mute.

We are a long way from Alexander Graham Bell's immortal "Watson, come here, I need you." By using the latest teleconferencing technology, our health plan is trying to keep communications as up-close and as personal as we can over our vast territory. With a little bit of attention to the details, we should be at the beginning of a beautiful friendship. ◇

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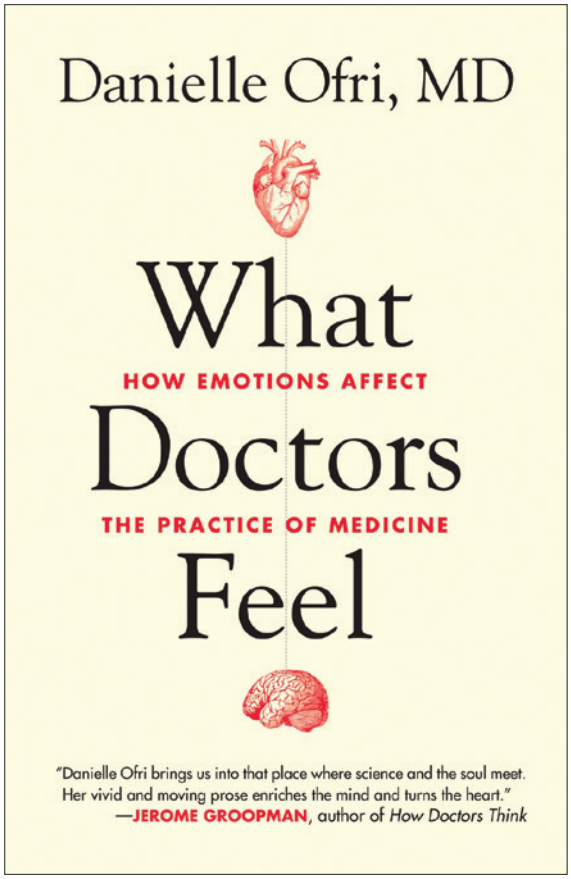
Hoping for More

Deborah Donlon, MD


Danielle Ofri, MD
What
HOW EMOTIONS AFFECT
Doctors
THE PRACTICE OF MEDICINE
Feel
"Danielle Ofri brings us into that place where science and the soul meet. Her vivid and moving prose enriches the mind and turns the heart."
—JEROME GROOPMAN, author of How Doctors Think

What Doctors Feel: How Emotions Affect the Practice of Medicine, Danielle Ofri, MD, Beacon Press, 232 pages.

It seems the American public is yearning to figure out what makes doctors tick. First came *How Doctors Think* (2008) by Dr. Jerome Groopman, followed by *What Doctors Feel* (2013) by Dr. Danielle Ofri. According to Amazon.com, these two books are "frequently bought together." They represent the yin and the yang of the physician psyche, one a guide to how our minds work, and the other a road map to our innermost feelings. From a patient's perspective, there should be some powerful insights offered here. Based on the coordinating titles, one wonders if Drs. Groopman and Ofri got together over coffee one morning to decide who should publish first. His quote graces the cover of her book, endorsing it as the place "where science and the soul meet."

Dr. Donlon, a Santa Rosa family physician, serves on the SCMA Editorial Board.

Dr. Ofri has an MD and a PhD, and she completed a residency in internal medicine. She is the mother of three children, a working physician and writer, and an associate professor at New York University School of Medicine. Her inspiration for *What Doctors Feel* comes from patients she has cared for as a faculty member at NYU's internal medicine residency at Bellevue Hospital. From her writing, it is clear that she has charged herself with teaching the psychosocial side of medicine to her students and residents. Rather than treating a patient with alcohol and drug withdrawal as just another admission, she probes to discover the exact moment in the past when the patient knew he was an addict, and she gets a moving response. Her underlings treat the patient with more concern and compassion as a result.

To a primary care physician in the trenches, Dr. Ofri's book has enormous potential and appeal. How do we feel, anyway? Every 15 to 20 minutes, we walk into the next patient's exam room. Each one has a chief complaint, or more likely, many complaints. It is our job to elicit information, show compassion, cure, heal, fix. And in family medicine, which many of us practice and teach in Sonoma County, there is always more than one patient in the room. The accompanying child, parent or partner also has a complaint, but not an appointment. How do we feel? Rushed, overwhelmed, concerned, altruistic, and often fortunate to be doing such challenging and beautiful work. Surely this book can offer us a road map for how to get in touch with our emotions, avoid burnout, remember the psychosocial perspective in caring for patients, and carry on.

What Doctors Feel is organized around a central figure: Julia, a young, undocumented mother with congestive heart failure who is hoping to receive a heart transplant. Dr. Ofri writes of the instant emotional attachment she

feels between herself and Julia, based on their similarities in age, physical characteristics and stage of motherhood. Giving Julia her initial CHF diagnosis, which feels like a death sentence for someone without legal status, is so difficult that Dr. Ofri postpones it until the post-hospital follow-up visit. She uses every tool at her disposal to help Julia get a new heart, and she rides the emotional roller coaster with Julia from elation at the prospect of a transplant, to despair over an unanticipated complication.

While the story of Julia rings true in describing how close physicians can become with their patients, and the journey doctor and patient travel together, much of the book's remaining pages disappoint. In those pages, Dr. Ofri details the rigors of residency training, and how some physicians respond to this constant stress and fatigue by making derogatory statements about the patients under their care, such as the doctor who says that an unwashed patient has "toxic sock syndrome." Dr. Ofri writes about disillusionment, burnout, physician addiction, medical errors, and the unfortunate consequences of lawsuits on subsequent medical practice. All of these issues are relevant to practicing physicians, but one gets the sense that Dr. Ofri is trying to exorcize her own demons, atoning for her mistakes and near-misses, as well as promoting her other published works. There is not much new here; even Julia was the subject of Dr. Ofri's previous publications. More research and fewer anecdotes would have made for a stronger book.

What Doctors Feel seems to be written more for the lay public than for a physician readership. There is a lot of detail about the process of medical school and residency training. We physicians remember those days like they were yesterday, and the memories are visceral. But residency, as intense and exhausting as it was, had a finite aspect that made it survivable. The practice of medicine over decades is something else entirely.

Here are four examples of what I hoped to get out of reading *What Doctors Feel*, but didn't. First, when I see the name of my most challenging patient on my schedule for the day, or on a telephone message, I have an unpleasant internal reaction. However, I still need to provide the best care possible for this person and to put my feelings about them aside. Is this possible? Second, my clinic has just adopted a new patient portal, through which all my patients can contact me via email. What if a patient emails me with an urgent concern when I am not close to the computer? Also, do I wish to spend my leisure time, already limited, responding to emails from my patients? Third, there are work-hour restrictions for residents, but not for attending physicians. When one has been up all night working in the hospital, it is nearly impossible to show empathy to patients by the next afternoon. Fourth, our healthcare system has incentives in all the wrong places, leading to poor outcomes, poor care and poor morale among physicians. What will it take to turn this around?

I would like to read a version of *What Doctors Feel* written with a physician audience in mind. In the meantime, physicians can explore their emotional sides by participating in P&PD (personal and professional development) groups with their colleagues and a facilitator. Balint groups, which explore the doctor-patient relationship in a structured format, also encourage emotional growth and conflict resolution.

One of the highlights of Dr. Ofri's book is the story of Dr. Herdley Paolini, a psychologist who created a program at a Florida hospital to combat physician disillusionment. Her program has been successful and multifaceted, and her message to the physician staff has been, "I'm available to accompany you on your journey." Perhaps that sentiment captures what all of us would like to feel: that as physicians, we are not in this alone. ◇

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Changing the Culture of Driving

Maria Pappas and Cindy Popovich

Remember when wearing a seat belt was considered an annoyance, unnecessary, or even too burdensome? Yet, the use of seat belts is now embedded in our culture of safe driving—not just for the driver, but also to protect the lives of passengers.

In today's world, we are challenged to keep our passengers and ourselves safe by avoiding distractions while we drive. Distracted driving is defined as "any activity that could divert a person's attention away from the primary task of driving."[1] In 2011, distracted driving caused more than 3,000 motor-vehicle deaths in the United States, out of approximately 32,000 total.[1]

The statistics concerning all driver populations demonstrate that we simply perform poorly when distracted. Text messaging is by far the most alarming distraction, as it requires visual, manual and cognitive attention from the driver. In other words, texting involves taking your eyes off the road, your hands off the wheel, and your mind off the task of driving.

Young, inexperienced drivers under 20 years old are at increased risk for distracted driving and have the highest proportion of distraction-related fatal crashes.[2] Their lack of driving experience can contribute to critical misjudgments if they become distracted, and they text more than any other age group. This trend among young people presents a growing danger, so it's important to address the issue now.

Ms. Pappas directs marketing and communications for the SCMA Alliance & Foundation, and Ms. Popovich chairs their Health Promotions Committee.

How do we make an impact and change the culture of distracted driving among our teens? By focusing on ways to change their behavior through legislation, enforcement, public awareness and education.

Three years ago, the SCMA Alliance took a step toward changing the culture of driving in our community by introducing the JourneySafe program to Sonoma County. JourneySafe promotes and teaches "positive peer pressure—friends protecting friends."[3] The program, based in Laguna Beach, was established by Dr. David and Donna Sabet, parents of Jill Sabet. Jill and her boyfriend, Jonathan Schulte, were two remarkable teens who lost their lives in a senseless single-vehicle automobile crash. They were passengers in a young friend's car on their way to junior prom. Their friend looked away from the road to search for a pack of gum, then panicked and lost control of the car.

Over the past three years, Officer Jon Sloat of the California Highway Patrol, together with Cindy Popovich of the SCMA Alliance, have brought JourneySafe to thousands of students at high schools throughout Sonoma County. The program, which is presented to school-wide assemblies, begins with a DVD describing Jill's story, followed by a question-and-answer session with Officer Sloat.

The JourneySafe philosophy stresses the importance of teen passenger and teen driver safety, and it encourages teens to "Remember the 5":

1. Buckle up.
2. Slow down.
3. Turn off your cell and don't text!
4. Limit your passengers and distractions.
5. Find your voice and speak out if you feel unsafe.

Studies have found that the most effective way to educate teens about the dangers of poor decision-making behind the wheel is to connect on a visceral or emotional level.[4] JourneySafe makes this connection by telling real-life stories and presenting realistic situations that young people will probably experience at some point. The program makes an impact on the lives of our young drivers by sharing Jill Sabet's story and emphasizing the control that teens have in avoiding distracted driving.

We all have a stake in the problem of distracted driving, and we can all be part of the solution. We must focus our attention on our own driving habits—we need to be a good example to our children, our peers, and our community, and to insist that when riding with others they do the same.

To bring the JourneySafe assembly to your child's school, contact Cindy Popovich at healthpromotions@scmaa.org or visit the SCMA Alliance & Foundation website at www.scmaa.org. ◇

References

1. National Highway Traffic Safety Administration, "Facts and Statistics," www.distraction.gov (2013).
2. NHTSA, "Policy statement and compiled facts on distracted driving," www.nhtsa.gov (2011).
3. JourneySafe, "What is JourneySafe?" www.journeysafe.com (2013).
4. Impact Teen Drivers Program, "What we do," www.impactteendrivers.org (2013).

Members-Only Benefits

When you join the California Medical Association (CMA), you hire a powerful professional staff to protect the viability of your practice. By protecting your practice from legal, legislative, and regulatory intrusions, your membership lets you focus on what's really important: your patients.

Members can offset the price of their annual dues when using CMA membership services and discounts. Thanks to CMA's group buying power, members receive deep discounts on everything from magazines to office supplies to insurance products. Many CMA members save more than their annual dues!

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Legal Services. CMA's legal department provides members with information and resources about laws and regulations that impact the practice of medicine. While CMA staff cannot provide physicians with individual legal advice, our health law information specialists, with the support of CMA legal counsel, will help you find legal information and resources on a multitude of health-law related issues.

PROFESSIONAL DEVELOPMENT

CME Tracking/Credentialing. CMA's Institute for Medical Quality (IMQ) certifies CME activity for credentialing purposes to the Medical Board of California, as well as to hospitals, health plans, specialty societies, and others. CME Certification is $29 a year for CMA members, $49 for nonmembers. For details, contact IMQ at 415-882-5151 or www.imq.org.

CMA Webinar Series. CMA's webinar series gives physicians the opportunity to watch online presentations on important topics of interest and interact with legal and financial experts from the comfort of their homes or offices. The webinars are free to CMA members and their staff. All of our webinars are also archived for on-demand viewing at any time in our resource library. Visit www.cmanet.org/webinars.

CMA Seminar Series. Experts from CMA's various centers travel to local county medical societies throughout the state, holding live seminars for members and their staff on a variety of issues. Contact your local county medical society for more information.

ICD-10 Training. The transition to ICD-10 will take strategic planning and considerable preparation. CMA has partnered with the largest and most respected coding organization, AAPC, to provide our members with a complete suite of ICD-10 solutions at steeply discounted rates. Visit www.cmanet.org/aapc for more information.

Certified Professional Coder Program. CMA members and their staff receive big discounts on Certified Professional Coder (CPC) training and certificates from AAPC. Contact your local county medical society for more information.

PRACTICE MANAGEMENT

CMA Reimbursement Help Center. Trouble getting paid? In the past two years, CMA's practice management experts recouped over $5.5 million from insurance carriers on behalf of physician members. CMA provides members with one-on-one assistance to identify, prevent and fight unfair payment practices. Reach CMA's reimbursement experts at 888-401-5911.

CMA Payor Contract Analysis. CMA members have free access to objective written analyses of major health plan contracts at www.cmanet.org/ces. Each analysis is designed to help physicians understand their rights and options when contracting with a third party payor, as well as which contract provisions are prohibited by California law.

PUBLICATIONS

CMA produces a number of publications to keep members up to date on the latest healthcare news and information affecting the practice of medicine in California. Subscribe to any of these newsletters online at www.cmanet.org/newsletters.

CMA Alert. CMA's bi-weekly e-newsletter provides up-to-date information on many issues of critical importance to California physicians.

CMA Reform Essentials. This regular publication provides readers with the latest developments in California's implementation of federal healthcare reform.

CMA Practice Resources (CPR). This monthly email bulletin from CMA's Center for Economic Services is full of tips and tools to help physicians and their office staff improve practice efficiency and viability.

CMA's Press Clips. CMA's daily news roundup provides a quick but meaningful overview of the day's healthcare news.

INSURANCE

Marsh Insurance Services. As the primary insurance advisor for CMA and its affiliated county organizations, Marsh offers a wide variety of sponsored insurance plans and services for members. Designed to cover a multitude of insurance needs, the sponsored plans include three types of disability plans, three group life insurance programs, workers' compensation, employment practices (with access to employment counsel included), dental plans and personal insurance concierge services to help with your insurance planning. More information on Marsh's sponsored benefit programs can be found at www.countyCMAmemberinsurance.com or by calling 800-842-3761.

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FINANCIAL SERVICES

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SUPPLIES AND RESOURCES

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DocBookMD. CMA members are eligible for a free download of the DocBookMD smartphone app, which allows them to securely send HIPAA-compliant messages directly from their iPad, iPhone and Android devices. Find out more at www.docbookmd.com or by contacting your county society.

Physician Practice Websites. Mayaco Design and Marketing offers CMA members deeply discounted website design services for their practice, starting at $1,250. Contact Mayaco at 209-957-8629 or visit www.mayaco.com for more information.

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MedicAlert. MedicAlert is a nonprofit foundation with over 50 years of lifesaving experience identifying and providing vital medical information to emergency personnel for over 4 million members worldwide. CMA members and their patients save $10 on new adult enrollments and $2.95 on Kid Smart Enrollments. For details, visit www.medicalert.org/cma or call 800-253-7880.

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LETTER TO THE EDITOR

My barber always managed to extort a generous tip from me by complaining about the cost of his Kaiser healthcare premiums. Since he found a less expensive plan, he no longer has Kaiser insurance, but he still gets the big tip because I am ashamed of the cost of healthcare in this country.

It was therefore with interest that I read an article in the *Wall Street Journal* on July 15 headlined "Slowdown in Health Spending Could Be at Risk." According to the article, the two biggest drivers of the increased cost of healthcare will be our aging population and technology. Referring to the latter, the article states, "In almost every other industry, innovation generally makes things more efficient and less costly. But in healthcare, it often brings higher costs with little added value." To prove this point, the article cites two treatments used for prostate cancer: intensity modulated radiation therapy (IMRT) and robotic surgery—technologies whose use has risen sharply despite a recent study that the advantages are mixed or marginal. There are numerous other examples in my own specialty of allergy about which the same could be said. I would bet that is the case for most specialties.

By law, the article goes on to say, "[Medicare] can't consider price when making coverage decisions. Nor can it insist that a new technology be significantly better than existing ones or encourage doctors or patients to seek less-costly alternatives." In my view, this situation will need to change. We need to inject an analysis of how much bang we get for each healthcare dollar buck. The question is how much economic pain will our citizens and businesses endure before changes in this law are made—and before I can sit comfortably in the chair of my razor-wielding barber.

—Al Haas, MD

Dr. Haas is chief of allergy at Kaiser Santa Rosa.

CLASSIFIEDS

Psychiatrist wanted

A staff psychiatrist at Sonoma Developmental Center participates in the multidisciplinary team process for the management of individuals with intellectual disabilities. Sonoma Developmental Center is operated by the State of California, Department of Developmental Services, and provides long-term residential services for individuals with intellectual disabilities. The psychiatrist performs psychiatric evaluations, participates in the multidisciplinary team meetings and provides recommendations to the primary care physicians in the psychiatric medication management of complex behavioral problems. The psychiatrist is also available via email and pager for consultation with primary care physicians for urgent clinical issues.
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Applications may be downloaded from the California Department of Human Resources website at **www.calhr.ca.gov.** Applications MUST be filed in person or by mail with:

Sonoma Developmental Center
Human Resources–Examination Unit
15000 Arnold Drive
P.O. Box 1493
Eldridge, CA 95431

For more details, call Dr. Michael Wymore at 707-938-6566.

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Staff Physicians wanted: Sonoma Developmental Center

Sonoma Developmental Center is a long term care facility operated by the State of California near Glen Ellen, California. The Center provides comprehensive health services to approximately 500 individuals with intellectual disabilities. We currently have four openings for primary care staff physicians in the fields of Family Practice, Internal Medicine or Pediatrics. The compensation and benefit package is competitive. Sonoma Developmental Center is an Equal Opportunity Employer. Applications may be downloaded from the California Department of Human Resources website at www.calhr.ca.gov. Applications (Form 678) MUST be filed in person or by mail with:

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SCMA News

Cynthia Melody, MNA

New SCMA Website

SCMA and its four county medical society neighbors (Marin, Mendocino-Lake, Napa and Solano) have partnered on a regional website that is inviting, easy to use and interactive. Features include:

Physician finder. Search for member physicians in all five medical societies by name, specialty, zip code and more. Search results provide you with contact information, mapped locations and even photos.

Physician and membership resources. Get information on all of your medical society and CMA member benefits and up-to-date CMA news.

Join online and/or pay dues online.

Patient resources. A robust offering of information and helpful links.

Advocacy. Find out how get involved, become an advocate and how to reach your legislators.

Events calendar and online registration for CME webinars, local dinners and more.

Also find a separate link to SCMA information including leadership, programs and publications, with searchable archives for *Sonoma Medicine* and *News Briefs*, and the physician directory. Visit www.scma.org soon.

MICRA

California's critical Medical Injury Compensation Reform Act (MICRA) protections are a national success story, safeguarding patients and their access to care for almost 40 years. As you've read in this issue, trial lawyers have filed an anti-MICRA initiative that would increase non-economic damages from $250,000 up to $1.2 million. The current attempt to defeat MICRA is sophisticated, multi-pronged and well-funded. The concerted effort of every medical professional helping is vital to CMA's success in preserving access to care and avoiding unnecessary increases in cost.

You'll be hearing quite a bit about MICRA in the coming months through news alerts, articles in our publications and your hospital medical staff meetings. SCMA's Dr. Peter Bretan, a District X trustee on the CMA board, has offered to meet with hospital medical staff to educate them about the substantial increases in malpractice rates and the severe impact to patient access that would result from the anti-MICRA initiative. We are also encouraging staff to donate to the MICRA Education Fund through CMA's political action committee, CALPAC, at www.cmanet.org/micra. Thank you to the medical staff at Palm Drive Hospital and Sonoma Valley Hospital who have already donated!

Healthcare Reform

Earlier this year, membership was asked for their opinion of what SCMA's priorities should be, and educating physicians about the Affordable Care Act was at the top of the list. Leadership responded by making "Leading change in healthcare system delivery" one of SCMA's five key strategies. SCMA will be supporting ACA implementation outreach and enrollment efforts to support universal access and create a culture of coverage. We will keep you informed about the Affordable Care Act and how it will influence your medical practice. Watch for a series of articles and events, beginning with two dinners:

The Federal Landscape: What's in store for healthcare. On Oct. 23, the county's medical community is invited to hear CMA's chief lobbyist, Elizabeth McNeil, discuss pending changes in healthcare reform, Medicare, Medi-Cal and more. See page 3 for a dinner reservation form.

Affordable Care Act: Impact and implications. In the works for this winter is a healthcare summit presenting the latest information for the medical community and their patients. Topics include Covered California, the impact of the ACA on healthcare delivery systems, implications to employers, hospitals' concerns about the ACA, and more.

Health Scholarships

The Holiday Greeting Card raises money for scholarships awarded to outstanding high school seniors and qualified undergraduate and graduate students who will enter a medically related field. Send a check, made payable to the SCMA Alliance & Foundation, to PO Box 1388, Santa Rosa, CA 95402. When you donate, your name will appear on the greeting card. Thank you for your generosity.

Awards Dinner Dec. 5

Look for the invitation on page 6 to see this year's award recipients. Mark your calendar now! ◇

Email: cmelody@scma.org

Ms. Melody is executive director of SCMA.

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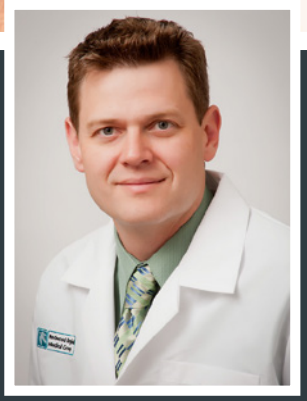
Breast Cancer Vaccine Trial Open

If you have a patient diagnosed with breast cancer and going through treatment, she may be a candidate for a new breast cancer vaccine clinical trial. Redwood's Dr. Jarrod Holmes is National Principal Investigator on a promising new regimen to eliminate recurrence. This is one of several trials now open here in the North Bay.

Learn more about the vaccine trial and Redwood's Research Center at RRMG.com/Research or call 707.521.3830.



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